PERCEPTIONS OF NINE SELECTED CITIZEN GROUPS REGARDING THE ANIMAL SCIENCE VOCATIONAL AGRICULTURE CURRICULUM IN THE CENTRAL-WESTERN REGION OF VENEZUELA

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CHAPTER I

INTRODUCTION

It is imperative that, in this modern era where very profound and significant changes are so rapidly taking place within the global milieu, each individual in every country become cognizant of the form of behavior most needed. For it is incumbent that each person be able to assimilate and, in some way, transform in a short period of time the acceptable mechanisms which activate, maintain, and improve the quality of life of mankind.

Each country makes a great effort to improve its educational system, thus providing new opportunities for its citizens, believing that through better understanding, technology, human and physical resources will be used to the best advantage. However, more economic resources will have to be committed to accomplish this task. Modern facilities and updated curricula are important aspects in modernizing education systems whether they involve community, region, or nations.

Transformations in the educational system best take place through a flexible curriculum as a vital component of the learning process. Such a flexible curriculum emerges as a result of a participatory process continuing from the planning

stage to evaluation and then to revision. Even though each curriculum must be based upon real and functional information, such information must be solidified by involving a group of knowledgeable and concerned individuals. Therefore, accomplishments can be brought about through the development of guidelines, for learning experiences in any field or discipline can well be expressed in terms of dividends, both to individuals or society as a whole.

Venezuela, considered a developing country within the mark of the Third World nations, is not an exception in its need for changes in concepts of curriculum and its effective development. For many years, as is true in so many nations, a multitude of changes have occurred in the economic, social, political, technological, educational and institutional strucutres, resulting in great concern for emerging efforts to incorporate every single resource into a productive area of specialization and yet have these same areas of specialization interrelated in a functioning whole.

Along with this line of thought, the two major and most significant events that contributed to the significant metamorphosis were, first, the discovery and exploitation of petroleum in considerable quantity in 1921, changing every economic, social, and cultural Venezuelan dimension, and converting an agricultural economy into an oil-based economy. The second event or landmark was the establishment of more stable democracy within the system of government. In the first one, the explosion of this new phenomenon brought with

it a significant opportunity to establish strong foundations to support the developing economy and perhaps even forestall the crisis being brought on as a consequence of the impact of world inflation.

It was inevitable that the country move from a most undesirable economy of the past, often referred to as "an economy of subsistence." This increasingly unwanted situation was characterized by exploitation of certain staple products as coffee, cocoa, rice, sugar cane, beef cattle, and some others. This subsistence economy was also increasingly subjected to less and less support compared to that given to industrialization, which affects all orders in a society.

The establishment of democracy occurred in 1958, in effect, constituting an abrupt change in both philosophy and policy, greatly strengthening all institutions and agencies within a rapidly diversifying economy.

Although progress has not always continued at a regular pace, it can be recognized as fact that, in general, the central government has been promoting those strategies and programs which seek to improve the welfare of Venezuelan society. As it became apparent that the new system was taking root, its successes began to create expectations among the populace, particularly in the educational structures and agencies, including among other components, research, teaching, and extension. Up to now, the system has been unable to solve the problems of inadequate personnel, either in quantity or in quality. In reference to this point, Quero Morales

(1, p. 645) expresses, "The Venezuelan educational system is anacronic and inadequate, because there has not been a program of policy with a sense of future." Nevertheless, some improvements have occurred in areas such as enrollment. For example, in 1968-69, the number of students in vocational agricultural education was 287. By 1978-79, the number had risen to 5,346 (see Table I). From this, the total of 1,119 students corresponds to the central-western region in relation to the total of students enrolled in vocational agricultural education at the national level (see Table II).

It has been evident that vocational agricultural education has not received the treatment it has deserved as an important component of the educational system. Figures in Table III show the slow increase in enrollment of focational agricultural education in relation to other branches of technical education in Venezuela.

In the last ten years, the interannual rate for vocational agricultural education has been 400.7 students for the whole country. According to Aguilera (2, p. III-10),

> the agricultural vocational education was offered to 5,346 students in 1981, representing 0.6% of the total enrollment at secondary level in the country, and 13.8% of the total vocational-technical education students.

It has been considered that vocational agricultural curricula developed more from the guessing standpoint of a few teachers at the central level than from a well-planned analysis of the needs of the Venezuelan agricultural society.

TABLE I

NUMBER OF STUDENTS ENROLLED IN TECHNICAL AND VOCATIONAL EDUCATION IN VENEZUELA

School Year	Industrial Education		Agricultural Education		Commercial Education		Home Economics and Others		Total
	#	%	#	%	#	%	#	%	
1968-69	5,854	49.80	287	2.44	4,843	41.19	771	6.57	11,755
1969-70	7,725	50.56	325	2.13	6,607	43.24	622	4.07	15,279
1970-71	10,977	51.55	329	1.54	9,172	43.07	816	3.83	21,294
1971-72	17,830	63.44	852	3.03	8,470	30.13	955	3.40	28,107
1972-73	15,531	47.63	1,442	3.54	12,564	38.93	2,895	8.97	32,272
1973-74	14,557	46.20	2,011	6.38	11,939	37.89	3,000	9.52	31,507
1974-75	15,778	46.08	2,857	8.34	11,889	34.72	3,716	10.85	35,240
1975-76	12,769	42.19	3,292	10.88	10,015	33.09	4,189	13.84	30,265
1976-77	14,005	41.49	4,204	12.45	9,286	27.50	6,263	18.55	33,758
1977-78	14,530	41.29	4,298	12.19	9,588	27.25	6,771	19.24	35,187
1978-79	14,596	37.79	5,346	13.84	10,427	26.99	8,257	21.38	38,526

Source: Ministerio de Educacion. Anuario Estadistico. Caracas 1979 (18).

TABLE II

NUMBER OF SCHOOLS AND STUDENTS IN VOCATIONAL AGRICULTURAL EDUCATION IN THE CENTRAL-WESTERN REGION (1978-1979)

State	Schools	Students	Animal Science	%	Plant Science	%
Lara	3	26	26	-	--	-
Portuguesa	4	676	373	-	303	-
Falcon	2	299	201	-	98	-
Yaracuy	2	118	91	-	27	-
TOTAL	11	1,119	691	61.75	428	38.25

Source: Ministerio de Educacion, Anuario Estadistico (18)

TABLE III

NUMBER OF STUDENTS ENROLLED IN THE CICLO DIVERSIFICADO (DIVERSIFIED CYCLE) OF SECONDARY EDUCATION IN VENEZUELA

School Year	National	Regional	%	Voc. Agric. Students (National)	%
1969-70	73,625	8,226	11.17	325	0.44
1970-71	88,308	10,123	11.46	329	0.37
1971-72	104,857	11,327	10.80	852	0.81
1972-73	125,793	14,541	12.95	1,542	1.23
1973-74	137,378	16,281	11.85	2,011	1.46
1974-75	155,560	20,126	12.94	2,857	1.84
1975-76	163,088	22,290	13.67	3,292	2.02
1976-77	183,861	24,362	13.29	4,204	2.29
1977-78	199,422	25,191	12.63	4,298	2.16
1978-79	205,712	28,422	13.82	5,346	2.59

Source: Ministerio de Educacion, Anuario Estadistico 1979 (18)

However, it must be recognized that subsequent development and implementation of different types of curricula have been tried to alleviate the situation. In any case, all these altera - tions without empiric bases, rather than creating a strong platform to sustain the agricultural transformation and consequently the well-being of rural people, have contributed to the development of barriers to progress and, in some cases, have held up the main goals of an educational challenge, which is the integral transformation of the individual personality to reach his/her actualization.

Some other factors sufficiently broad to be studied to obtain and adopt valid alternatives in agricultural education are the following:

1. New technological approaches and sophisticated scientific equipment have been incorporated in the last two decades into the agricultural dimension as a part of the Venezuelan evolution economy.

2. The new national concept of regionalization of the country, which means the establishment of alternatives according to the regional characteristics (geographical, social, historical, economic) attempting to solve imminent regional problems.

3. New knowledge, skills, and abilities in agriculture have become basic needs to be met in order to build a successful agricultural enterprise.

4. The dynamic process of industrialization in agriculture demands human resources academically well prepared to

accept the challenge of transforming the agricultural economy with revolutionary but real plans of action.

5. The need for improving the low level of production and productivity of the farms substantiated by the fact that most of the agricultural products consumed in Venezuela are imported, as it is quoted by Aguilera (2, p. III-6):

> By 1981, $900 millions of dollars were paid for imported agricultural products, representing according to the same author, an increase of 29 percent over the previous year.

Viewing this panorama, the researcher expresses the urgency of building and implementing a vocational agricultural curriculum as soon as possible, based upon the present circumstances with futurist criteria, bringing together specific efforts to contrive practical answers to the agricultural problems, and thereby satisfying the needs of the Venezuelan population.

Importance of the Study

Since there has been limited investigation in the field of vocational agricultural education curriculum in Venezuela, this study was needed to bring attention to the priorities of developing an educational system, among others, for the following reasons:

1. No studies have been made attempting to find proper answers to those problems affecting the different phases of the curriculum development in animal science and vocational

agricultural education in Venezuela at national, regional, or even local levels.

2. Previous studies have been limited to, and centered around, other areas, rather than curriculum in vocational agriculture.

3. All the attempted curricular changes have been based upon unrealistic assumptions in regard to methods of teaching, subject-matter structure, instructional objectives, content, evaluation, performance of the graduates on the job, knowledge, skills, attitudes development, and resource utilization.

4. This study would provide a broad base upon which the Ministry of Education of Venezuela at regional levels could propitiate first, an awareness of curriculum planning development, implementation, and evaluation among the individuals and agencies, and secondly, a realization by various groups of the magnitude and value of developing a national analysis of vocational agricultural curriculum utilizing this strategy.

Statement of the Problem

Considerable progress has been made all over the world towards the adequate development of human resources for those on-the-job tasks which require qualified knowledge, skills, and positive attitudes, enabling the worker to be efficient and happy. All of these accomplishments are made possible thanks to well-planned and executed instructional curricula.

The tremendous job done by vocational agriculture in some countries is unquestionalbe. One of the conclusions

established by the Study Comittee of the Wisconsin Association of Vocational Agricultural Instructors (3, p. 34) is that:

> agriculture can be considered as comprising two major components: the farming or production segment and the nonfarming or agribusiness segment. The art of farming is being replaced by science and technology and by business principles and techniques.

In the Venezuelan case, as far as has been determined, no research has been conducted regarding the animal science curriculum in vocational agriculture. For this reason, many efforts to introduce new changes in this type of curriculum have been limited to superficial reforms of the plans of study.

Based upon the previous considerations, the researcher considered the possibility of establishing relevant mechanisms to interpret the perceptions of the population relating to vocational agriculture primarily in animal science, by obtaining the opinion of teachers, current students, graduate students, parents, farmers, administrators, and other representative institutions.

Nevertheless, one must recognize the presence of imminent problems and conditions which reinforce the idea of initiating an evaluation of the present curriculum in animal science, an attempt is now being made to solve undesirable realities which may presently exist in the central western region of Venezuela. Unfortunately, none of the community representatives are involved in planning, implementing, or evaluating

the vocational agricultural curriculum. This reality could be attributed to the fact that no opportunity has been given to all valuable human resources to contribute with their ideas or to develop a curriculum in a close relationship with the reality surrounding the communities.

Problem

The problem of investigation is, basically, the need to know the nature and extent of participation of selected groups of individuals in the development and implementation of curriculum in animal science in four vocational agricultural high schools of the central-western region of Venezuela.

Purpose of the Study

The major purpose of the study was to determine the nature and extent of involvement of nine selected groups, made up of (1) current students, (2) graduates, (3) teachers, (4) farmers, (5) parents, (6) administrative personnel, (7) national supervisors, (8) regional supervisors, (9) faculty of agriculture at the university level, in the development and implementation of curriculum in animal science in four vocational agricultural high schools of the central-western region of Venezuela. A concomitant purpose of the study was to analyze perceptions of persons in these same groups regarding the adequacy of the present curriculum and their suggestions for revision.

Objectives of the Study

1. To determine the extent to which respondents comprising each of the nine selected groups perceive themselves as having been involved in the development and implementation of the present curriculum.

2. To secure respondent perceptions as to the acquisition level of knowledge in selected animal science topics being obtained by students of vocational agricultural high schools.

3. To secure respondent perceptions as to the acquisition level of skills in selected animal science topics being obtained by students of vocational agricultural high schools.

4. To determine the extent to which respondents in selected groups feel that student attitudes are developed by classroom study of theory and by out-of-classroom practice of selected animal science topics.

5. To determine perceptions of respondents in each of the nine selected groups as to the current levels of performance exhibited by former students who studied the present animal science curriculum.

6. To determine perceptions of respondents in each of the nine selected groups regarding proposed changes.

7. To develop and present a curriculum development model for consideration by the Ministry of Education.

Assumptions

The present study was based upon the following assumptions:

1. The development and implementation of a vocational agricultural curriculum should be based on the needs of the members of the community and supported by their entire participation.

2. More participation and cooperation of the community members in the activities related to curriculum planning, implementation and evaluation ensure greater success in the learning process.

3. Vocational agricultural curriculum must be the vehicle of the rural communities to facilitate the improvement of the people, tightening the relationship of the individuals entailed to the agricultural area.

4. Members of rural areas nearby the vocational agricultural high schools are willing to cooperate in the process of exchanging ideas and resources to contribute toward a more effective and realistic education, seeking higher standards of production and productivity incorporated through new technological concepts and modern methods of production.

5. The quality of vocational agricultural education incorporates qualified human resources into the labor market, enabling individuals to manage and establish agribusiness enterprises with a scientific criteria and to achieve a great deal of success as the curriculum is planned and implemented,

based upon the competencies required by the agricultural industry.

6. The success of an integral and complete learning process takes place when the planners and executers design a well-balanced curriculum based on the cognitive, psychomotor, and affective domains, among other factors, such as content, instructional objectives, methods of teaching, resource utilization, and effectiveness of evaluation.

7. The responses revealted by the subjects in this study represent an honest appreciation of the individuals' interest and emotions regarding the proposed items of the survey.

Scope of the Study and Limitations

This study was limited to four vocational agricultural schools in the central-western region of Venezuela and was based on the perceptions of nine groups of subjects integrated by teachers, current students, graduates, parents, farmers, national supervisors, regional supervisors, university professors, and administrative personnel.

This study was circumscribed in valuable ways to provide an appropriate base for study and to allow the opportune accomplishment of goals. In a general sense, it is not perceivable that the limitations mentioned did affect the level of significance, achievement, and quality of the results. These limitations are the following:

1. Since the investigation took place at a considerable distance from Oklahoma State University, located in Stillwater,

Oklahoma, United States of America, the lack of persistent contact, along with difficulties in obtaining information, constrained in certain forms the process of data gathering among the subjects selected as a sample.

2. The problem of internal communications in the region where the study was applied, imposed in some ways the limitation of the data collection from some of the groups selected.

3. As the survey was developed, validation and revision of data gathering instruments was accomplished with a group of persons made up of Venezuelan students actually enrolled at Oklahoma State University, as well as faculty members of the Agricultural Education Department and Community Education Center in the same institution.

Definition of Terms

Curriculum: Refers to the structure organized in terms of subject matter in a vertical and horizontal relationship so that students receive basic knowledge, competence, and develop desirable attitudes. Author's definition based upon Tyler (9), Taba (7) ideas.

Curriculum Development: The researcher, for the purpose of this study, defined Curriculum Development as the dynamic process by which all resources are integrated into a comprehensive design to support learning. Author's definition based upon Tyler (9), (14), and Taba (7) ideas.

Curriculum Implementation: For the purpose of this study, Curriculum Implementation is defined as the series of

subsequent stages of execution of the alternatives deliniated in the curriculum, making a rational utilization of the human, physical, and economic resources (author's definition).

Basic Cycle: The first three years of study after completion of primary school level, according to the Ministry of Education of Venezuela (4).

Agriculture Diversified Cycle: A branch of secondary education as a part of technical education with the following goals: To continue the general culture, to offer the right professional orientation, and provide a basic professional formation within the different subbranches and specialties in agriculture. Ministry of Agriculture (4).

Optional Nucleus: A group of subjects intimately related within a specific area of agriculture, which provides the opportunities to the students to choose the most desirable area according to their interests, knowledge, and skills. Example: swine production, beef cattle production, etc.

Perito Agropecuario: A diploma received after completion of three years of study at the secondary agricultural education level. The students acquire a certain number of practical skills, a rudimentary knowledge in agriculture, and a background in general studies.

Educational Region: Used to describe a geographical area, constituting a political subdivision for the planning and development of economic, social, and cultural aspects, including education. According to the Decree No. 478 of the

Venezuelan government the country is divided into nine regions (see Figure 1).

Director: The individual who directs, administers, and guides the execution of the policies in the school. He is in the top position of the administrative structure of the school.

Subdirector: Substitutes for the director in his functions when required; other specific functions include personnel management, internal evaluation, and control of projects in execution, supervision.

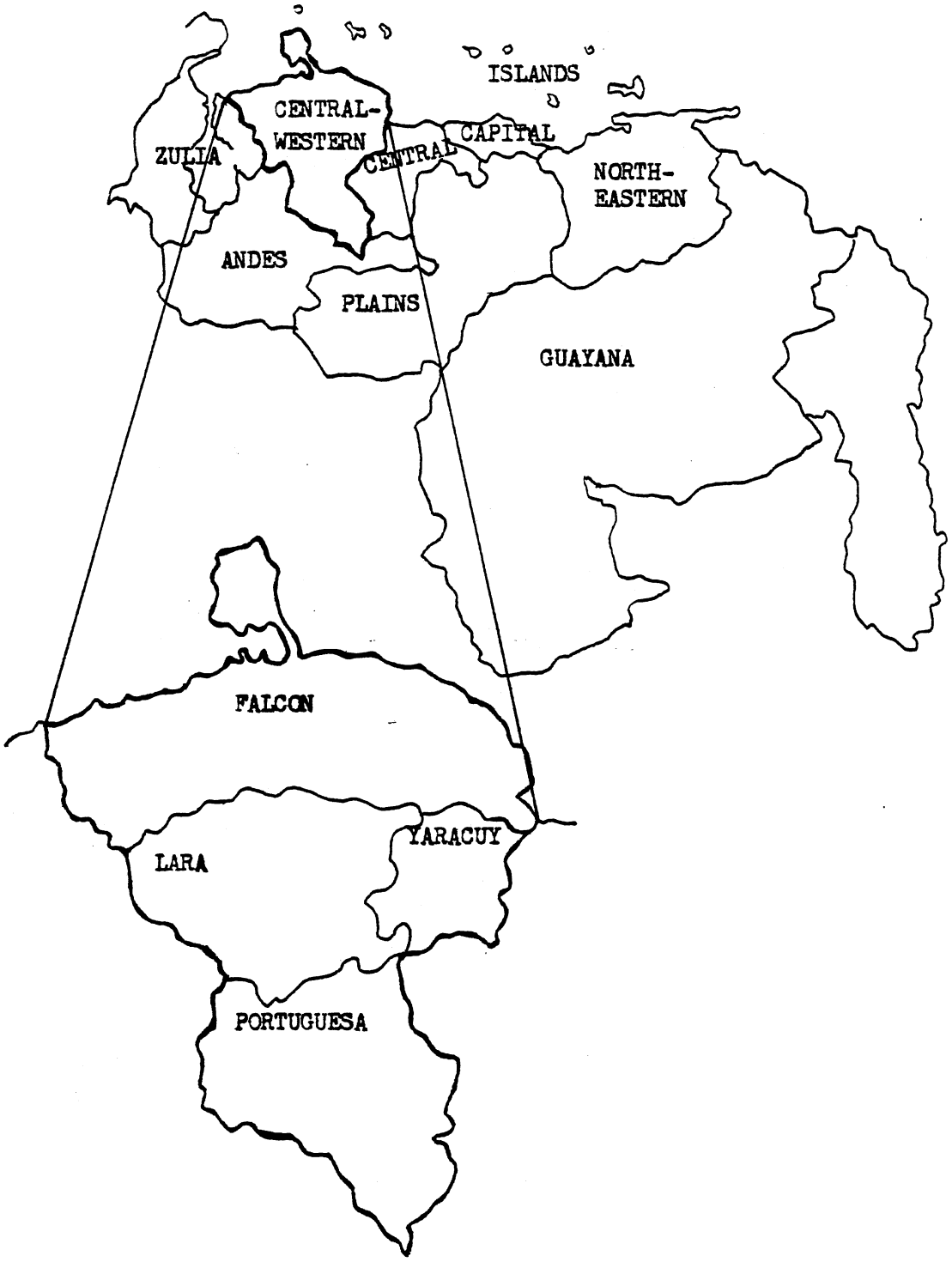


Figure 1. Regional Map of Venezuela and of the Central-Western Region

CHAPTER II

BACKGROUND AND REVIEW OF LITERATURE

Introduction

For the purpose of this study, the review of literature was divided into the following three areas: 1) curriculum and curriculum development, 2) rural development, and 3) vocational agricultural curriculum, with particular analysis of methods and structure related to animal science. Since the study was developed in a Venezuelan locale, the investigator inserted some specific aspects related to vocational education and animal science and how the learning of these has progressed in the country.

Curriculum and Curriculum Development

Perhaps the most important question posed by educators is how to integrate such broad information and knowledge into a curriculum providing maximum learning possibilities and incentive for the learner, as stated by Kendred (5, p. 1) "that will not only meet each one's personal needs, but also incorporate social realities, including the perpetuation and realistic interpretation of democratic values."

To reach the main task of education, it has been considered necessary to develop and implement these methods and processes which maximize responses from prospective learners and which also are in line with the expectations of society. Such a process can truly be called curriculum development.

Within a period of many years, this concept has been interpreted in different ways by various planners, implementers, and evaluators. Often, as a consequence of such varied interpretations, agreement as to the major purpose of education is only accomplished in a very broad form.

Some people view curriculum as a content of particular subject matter, while others see it as embracing the whole context of any educational program, including all the resources which possibly need to be used in planning, implementing, and evaluating the process. In the judgment of Kelly (6, p. 3) when presenting his conception of curriculum, stated: "The first need is to achieve some clarity over what we are to understand by the term curriculum."

Taba (7, p. 10) defines curriculum as "a way of preparing young people to participate as productive members of our culture." Obviously, to achieve this goal it is necessary to set certain criteria based upon analysis of our culture. This makes more readily possible the establishment of guidelines to, in turn, determine objectives, content, and rationale. From this point, the choice of appropriate strategies or methodologies to be used in approaching the goals is greatly facilitated.

Grobman (8, p. 113) states that

> curriculum can be broadly viewed as including everything needed to achieve the curriculum plan, all classroom contacts, and all materials for students and teachers, and possibly training for teacher.

All aspects included in such curriculum must be organized through a sequence of events, each step facilitating the achievement of the next one. The interaction between the environment and the student should definitely be given primary consideration. It is very important that opportunity be provided the student to perceive and experience the reality of his environment and the situation surrounding his life.

Tyler (9, p. 65) suggests some general principles in selecting learning experiences to be applied in curriculum implementation:

> Learning experiences give the student opportunity not only to solve problems but to work particularly upon health problems.
>
> Learning experiences must be such that student obtains satisfaction from carrying on the kind of behavior implied by the objectives.
>
> The reactions desired in the experiences are within the range of possibility for many students involved.
>
> There are many particular experiences that can be used to attain the same educational objective.
>
> The same learning experiences will bring about several outcomes.

Each of these principles should be considered as mandating very careful selection of strategies to be followed in curriculum planning, implementation, and evaluation toward

the achievement of goals of any educational field or system. As many recognized authorities in the field of curriculum development assert, vertical and horizontal articulation of curriculum must be implicit in developing any plan, integrating the facts which take place on society and perceived as stimuli to originate change in the individual concomitant with this entire learning experiences.

Kelly (6, p. 1) states "That education system is a social institution which should be expected to change along with other institutions." The investigator interprets this to mean that every stimulus that occurs during any period of the development component in any country will affect the nature and structure of the educational system. Subsequently, the curriculum at any level or at any stage or in any particular field will be affected. As a result, it would seem implicit that desire and beneficial changes in behavior will be expected to occur when a well-planned curriculum is implemented properly, preparing the student to be incorporated to the society and to contribute to the achievement to the many tasks of the "new era."

It has been established for many years that in any system of education, the responsibility of the public schools is to provide, in every way possible, the directions and means for learner acquisition of needed knowledge, skills, abilities, and attitudes which will prepare all learners in any field to be well qualified functioning persons. As a result of such preparation, these people are made capable of

contributing new ideas and skills, doing their part in building a better world or a more acceptable society.

An increasing number of curriculum authorities recognize that an integral curriculum should be something which thoroughly meshes the realities of other fields of study with the outside world. Both the physical and mental experiences outside of the school must be thought of as a total environment and be viewed as a big laboratory where many experiences take place and where people can learn new things each day, with opportunities constantly being offered to the learner. At this point Drawbaugh and Hull (10, p. 63) express this concept when they say:

> Since curriculum experiences represent interaction between the learner and his environment over an extended period of time, the process of curriculum construct may be viewed as a larger interpretation of the teaching learning transaction.

Following the same line of reasoning, Tyler (9, 5-62) expresses:

> In order to provide the basis for developing these knowledges, skills, attitudes and the like, that will help people to deal intelligently with contemporary problems, it will be necessary to consider the kind of information to be obtained and how the objectives in the curriculum would be significant.

Further, he suggests the following with regard to sources of information:

> Studies of the learners themselves; Studies of contemporary life outside the school; Suggestions about

> objectives from subject specialties; The use of Phylosophy in selecting objectives; Stating objectives in a form to be helpful in selecting learning experiences and guiding teaching; the use of a Psychology of learning selecting objectives.

Henrrick and Tyler as quoted by Drawbaugh and Hull (10, p. 24) have analyzed approaches to curriculum from the standpoint of four basic designs, namely instructing curriculum experiences according to (1) subject, (2) broad field, (3) problems of living, and (4) observed needs.

Again, many curriculum authorities and much research assert that curriculum efforts are being focused on occupational needs and demands, which hopefully provide a sequence of the learning experiences. Obviously, these should be provided to the student at intervals closely related to his physical and psychological development in order to prevent frustration or any disturbance in the student's personality. Instead, the purposefully structured instruction will increase such level of learning for the student.

Considering the learning process, Bloom (11, p. 20) has suggested a classification of taxonomy of objectives, supported by the comprehensive and communicability. He says:

> Taxonomy should satisfy two other criteria, it should stimulate through about educational problems, and it should form the basis for suggestions and testing techniques, as methods for developing curricula, instructional techniques, it should form the basis for easily determining the availability of relevant instrument techniques and methods.

Such thought given to structure and classification emphasizes the truth that with the rapid technological developments in industrial societies since World War II, it is not easy for the specialists in curriculum planning to integrate contents in subject matter in order to satisfy all the expectations of the society. While this is true in all societies, it is of particular concern in countries where the level of education has been too low to develop appropriate changes in the student's behavior in order to improve the economy. Some authorities have been supporting the idea that this happens because of the great differences between what is needed to be learned, and what is taught.

Faunce (12, p. 22) remarks that:

> There is too much emphasis on subject matter without much relationship to the pupil's real needs, interests, or abilities.... there is too much dependence on textbooks as the source of subject matter that only verbally can the pupil comprehend.

Faunce further continues with the idea stating that "The traditional curriculum is completely inadequate to meet the needs of boys and girls who must live in a world changing as rapidly and profoundly as is true today."

The logical consequence of this kind of instruction is mere information given by the teachers year by year, without providing any responsibility to the students. As a result, the students do not receive the opportunity to get real experiences and creativity is minimized to the level where students just repeat the concepts or the amount of knowledge

requested at the moment of the test. This conception is contrary to what Mumphrey (13, p. 21) explicitly manifests:

> The training and experiences received in coping with and solving the common and unusual problems in early life form a nucleus for the development of insight into the solution of more complex problems of living.

This concept of instruction encourages the student to be more independent and to become more creative and to use more initiative at the moment of executing any job.

On the other hand, the methodology and different procedures seem to be obsolete and not appropriate for teaching new technologies, which, in many cases, are transplanted from one country to another without any consideration of the influences on the learner and the methods that should be used in instructing people.

In connection with the problem of guiding the learner in carrying on desired behavior, some related information appeared in an article by Tyler (14, p. 27) stating "that is common that the teacher's behavior is observed in class by the students, thus representing something like a model to direct their own." This aspect represents another side to the problem of curriculum implementation, which focuses on the ways that a teacher demonstrates his behavior, perhaps no uses to solve problems, rather than giving out information.

Legal Bases and Tasks of Curriculum In Venezuela

Like any other country, Venezuela has structured a

series of fundamental policies stated in legal instruments to substantiate the main goals of the educational system. The most important of these instruments, The Constitucion Nacional, (National Constitution) (15, p. 15) in Chapter IV, Article 78 expressly states:

> Everybody has the right to be educated. The state will create and sustain schools institutions and services sufficiently equipped to secure the access to education and culture, without any limitations than those derived from vocational and individual aptitudes. Education imparted by the official institutes will be gratuitous at all levels. Nevertheless, the law could establish exceptions related to higher and special education, whenever the person has enough fortune.

Theoretically speaking, everybody has the opportunity to receive education supported by the government at almost all levels. This assumption contrasts with the real situation described by Aguilera (16, p. 134) when he says that "From the total of 100 children, studying primary education in the rural sector, 78 are potentially functionally illiterate."

Another significant instrument developed by the government to guarantee the establishment and execution of the national policies related to education is the Ley Organica de Educacion (Organic Law of Education (17, p. 1), which states in Title I, Article 1:

> The present law establishes the directions and basis of the education and planning as well as the organization of the educational system and normalizes the function of services related to education.

The above information summarizes the level of dependence that the state is able to generate at any official level of educational institution creating a strong vertical structure which appears incapable of supporting the accelerated growth process of the educational needs. This is represented by the fact that each year more and more people are incorporated into the educational system at different levels, as is shown in Table IV.

TABLE IV

STUDENT ENROLLMENT IN VENEZUELA FOR THE 70s DECADE

School Years	Pre-School	Primary Education	Secondary Education	Higher Education
1969-70	44,463	1,689,608	360,435	--
1970-71	50,159	1,776,275	417,367	--
1971-72	71,853	1,838,314	467,024	95,294
1972-73	86,241	1,894,206	533,653	115,462
1973-74	93,113	1,924,040	584,211	159,269
1974-75	152,266	1,990,123	631,210	193,264
1975-76	224,600	2,108,413	669,138	221,581
1976-77	284,459	2,204,074	719,680	247,518
1977-78	329,019	2,309,173	751,430	265,671
1978-79	328,927	2,378,601	787,032	282,074

Source: Ministerio de Education. Anuario Estadistico (18).

The rate of enrollment during the decade of the 70s was, according to the Anuario Estadistico del Ministerio de Educacion (18, p. LXVII), 3.9 percent.

In relation to the enrollment at secondary education, the interannual rate in the last decade was 8.8 percent according to the figures presented by the same source of information. The educational system of Venezuela is divided into the following levels: preschool, basic education, secondary diversified and professional education, and higher education (see Figure 2).

According to the Ley Organica de Educacion (Organic Educational Law) (17, p. 8) Chapter IV, Article 23, the objective of the secondary diversified and professional education is:

> To continue the formative process of the student, initiated in the previous level, to amplify the student's integral development and his cultural formation; to offer opportunities which allow him/her to define the field of study and career, to offer a scientific, humanistic and technical preparation, to be able to be incorporated into productive work and to orient him for the prosecution of studies in higher education.

This statement serves as guidelines for establishing the philosophy of planning, development, implementation, and evaluation of the educational process, the conception of instruction to incorporate Venezuelan citizen to the active life of society where the relationship between the school and the sector of production should be intimately related.

Since 1921, when petroleum appeared in Venezuela, all different factors which contribute to the economy of the country have been reorienting their policies. New strategies have been established because of the transition from an agriculturist country to an oil producer. Nevertheless, it seems

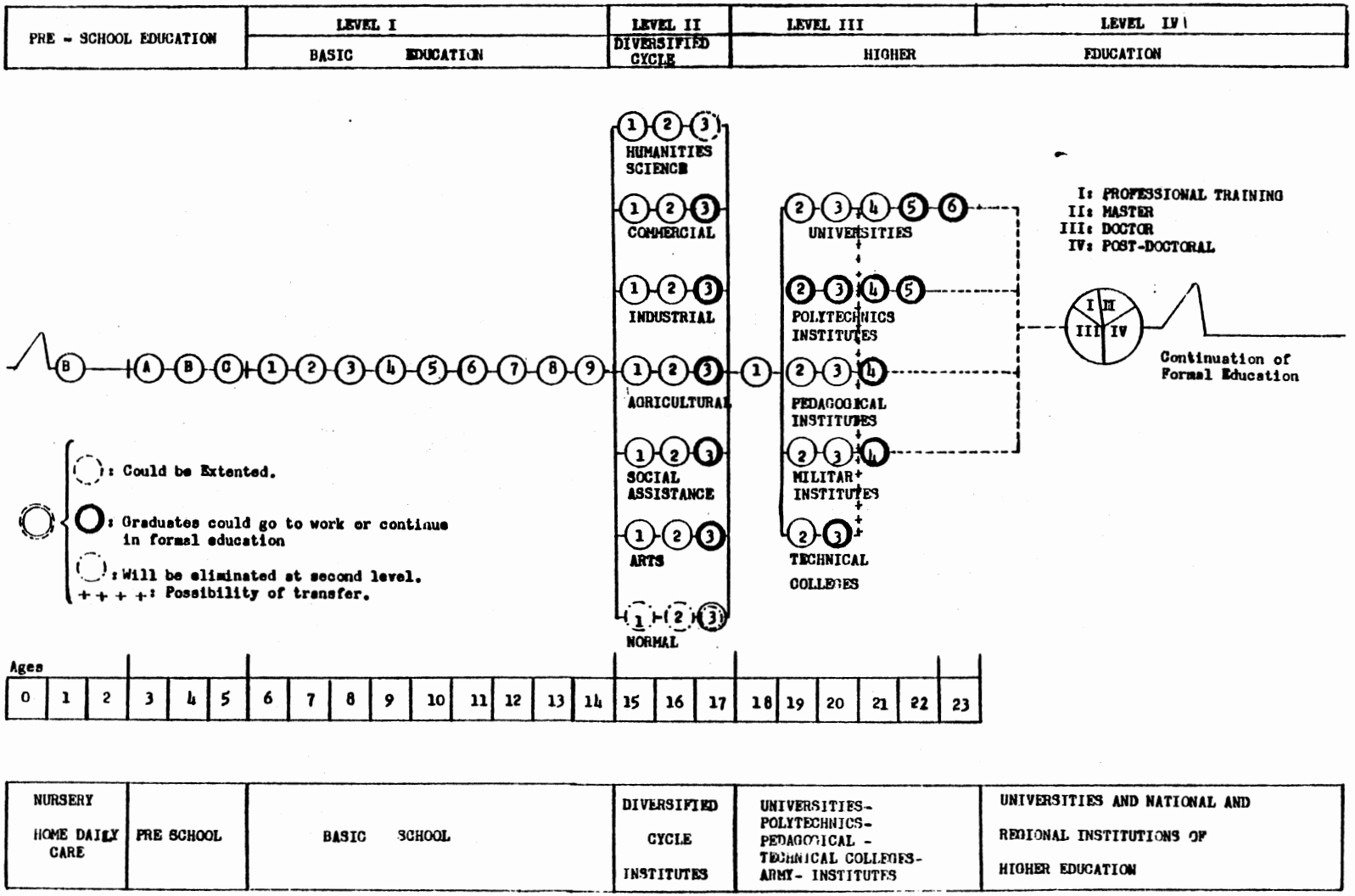


Figure 2. Venezuelan Educational System Structure

paradoxical that being, at this moment, one of the greatest exporters of petroleum in the world, which means a high level of gross national income, paternalism on the part of the government has been growing deeper into society norms, and most of the commodities are imported to satisfy the needs of the population.

From the number of students who left primary school, which in 1978 was 2,378,601, only 38,187 were enrolled in the technical and commercial schools later. The greatest number goes into the traditional careers like science and humanities, which will provide opportunities for them to go to the university to study careers other than agricultural production or animal science. Between 1932 and 1958 there was a failure in activities regarding agricultural education as it is reported by Gonzalez V. (19, p. 236), and the causes of the poor development or rural education were grouped in four major categories:

> 1. The lack of personnel professionally prepared, 2. Absence of well-structured plans and inadequate professional staff to carry them, 3. The general political situation, where officers of Ministry of Education were more concerned with political activities than with educational matters, 4. The existence of complex social circumstances that have prevailed in Venezuela for generations.

The association of educational expansion and social development may be coincidental rather than premotivated. In some cases, as it is said by Dominguez quoted by Aran and others (20, p. 36), "As in Venezuela educational expansion

is paralleled by economic growth; however, upon examination, the latter does not seem to be directly related to the former." In other words, the product of the expanding educational system does not seem to have significantly affected the patterns of the enterprise production, the emergence of few innovative elites or the development of participation patterns.

Very commendable progress has been made in many aspects of education in Venezuela since January, 1958, particularly in the quantitative growth of vocational agricultural education. By 1969, there were 325 students enrolled in vocational education, and in 1979, the total enrollment was 5,346 according to the Ministry of Education (21, p. 436). These figures show that in eleven years a great number of students were incorporated into vocational education.

In 1969 one of the biggest reconstructions in the secondary level of education took place. This reform in curriculum was conceived, by dividing secondary education into two denominations: the basic cycle and the diversified cycle. Two premises were considered to adopt the new approach, as stated by the Ministry of Education (22, p. 4):

1. The promotion of equality of opportunity for all the students, minimizing the influence of any mechanisms of selection which reflect the structure of Venezuelan society.

2. The diversification in preparing individuals with the objective of minimizing possible problems of frustration as the educational system feeds the occupational market.

Hopefully, the new approach should give the opportunity to the student, among some other aspects, as quoted by Perez Olivares (23, p. 29), "to be incorporated and grow up in any occupation." Apparently there has been a certain contrast between the expectations and reality evidenced during the implementation of the reform, according to the proper Ministry of Education (24, p. 12), basically attributed to the following factors among others: 1) the low level of orientation in vocational education given by the diversified cycle because of the lack of actualization and in-service training of teachers, most of them without academic and pedagogical preparation, 2) the low level of estimation existing in the Venezuelan society in regard to vocational and technical studies, 3) the high level dropout because of socioeconomic factors, 4) lack of communication between planners of vocational-technical education and the planners of the social-economic development of the country at regional and national levels, and 5) the low level of performance of the students.

Another factor parallel to the above is pointed out by the same source (25, p. 12), "At the level of diversified cycles the programs of study are excessively theoretical." According to this premise, the cognitive domain constitutes the major part in the process of instruction, resulting in the student getting more theoretical knowledge than practical. This means that most of them could be rejected by future employers because of their lack of skills and abilities.

Sequera de Segnini (26, p. 297) mentioned some of the key factors associated with the failure of the educational system at the secondary level in Venezuela:

> The scarcity of the appropriate number of institutions at secondary level, the ineffective educational methods used, the sub-level preparation of the teaching personnel ... the educational learning process, under estimation of the integral development of the individual, deficiency of supervisor activities, and inadequate supply of resources. Adding to these realities, the problems of the students as a consequence of the low level of income of their families, malnutrition, the lack of motivation from others, and the high drop-out rate from schools, due to the common norm.

These problems in education have been studied from different viewpoints, and many conclusions have been found through the literature, some of them optimistic and others pessimistic. But, in the opinion of Costejon (27, p. 195), "The only remedy to the education system is the total demolition of the archaic structure to create a new transformation of Venezuela, parallel with scientific and technological advances."

Curriculum Planning for Rural Development

Educational change in rural communities has been occurring slowly throughout the years. The conception of many sociologists in regard to educational systems and processes has been conceived as maintaining cultural continuity and improving productivity. This could be true in the more developed countries where advanced technology has been so

high that a great part of their citizens have the opportunity to go to school, the average level of income is sufficient and the opportunity to go to school and get a degree seems to be equal for everyone. But, in the developing countries, not much has been done to achieve the main goals of the human being through the educational systems. The fact is that education has been notoriously slow in effecting needed change. Bandy (28, p. 3) states, "One reason for this probably has to do with the domestication of public schools." Since individual students have to accept the instruction offered, they do not have the opportunity to participate in their own curriculum planning process. In other words, the strategies to make a change is decided by others. Obviously, these changes in some cases are very well-structured. Ching, quoted by Bandy (28, p. 13), states five categories projected to classify change: "Substitution, alteration, perturbation and variation, restructuration, and value orientation change."

On the other hand, changes in rural areas, for the major part, are the task of a change agent or an educational innovator, who has the great responsibility for changing the behavior of people by using new concepts based on new technologies, effective methods of teaching, and the use of realities held by the communities.

Obviously, this complex process of integrating each component taken as an influential factor in rural development, requires specific strategies to identify the needs and convert them to specific objectives within the school, which in the

words of UNESCO (29, p. 26), "...would seek primarily to become a true emanation of the community it serves and of the society for which it is conceived." To accomplish the goals of such a dynamic process, the active forces of the community must be involved in every step the school attempts for preparation of future generations. One study by Reubens (30, p. 69) referring to vocational education in other countries, revealed three of the five most important trends in foreign countries: 1) formal occupational skill training is required for all young people, 2) cooperative education is becoming the universal norm, and 3) active participation by representatives of employers and worker organizations in planning and operating vocational education courses is gaining in importance as a necessary factor in the successful operation of such schools.

A corollary of these ideas is that planning, implementation, and evaluation of curriculum for vocational education development will be more effective if the relationship between the community needs and the school meet somewhere in the sphere of the learning process.

There is a common agreement of various specialists in the field of rural community development concerning the complexity of the process, that success should be achieved when human physical and economic resources are articulated, vertically and horizontally into a specific structure, in such a manner that promotes and enhances the learning process of

individual students to guarantee and maximize a productive environment.

Cary (31, p. 26) incorporates some of the most important components of the process of community development in his concept, such as organization, planning and action, definition of needs (common and individual), resource utilization and institutional and agency relationship. One of the beliefs or concepts described by Price (32) in an article entitled "Thanks for our Heritage and Thanks for our Change," expressly states: "The vocational agricultural program must function as an integral component of community life and development." This means that rural community development must have well-prepared human resources to occupy those important positions which stimulate change by bringing about and enhancing rural community development. At this point, many countries are aware of the importance of involvement of community members. Actually, they are incorporating different kinds of strategies and different types of processes such as community education, conceived by Minzey and Latarte (33, p. 29) "as a philosophical concept which serves the entire community by providing for all of the educational needs for all of its community members." Furthermore, the concept emphasizes that "using the local school as a "catalyst," resources could be better integrated and utilized to improve community living and develop the community process toward the end of self-actualization.

Regarding the cooperation strategies, Parson (34, p. 22) states:

> If we are going to strive for cooperation among resources in our communities, we must first initiate the process of role definition. This definition process will identify the resources available and the services they are able to provide. It is important, however, that agencies and institutions deliver services via community schools and still maintain their independent identities.

Figure 3 summarizes a concept developed by LaCruz (35) considering the relationship among the different forces which are influential in rural community development. The overall balance of efforts is evident through the rational use of every single resource, human, physical and economic, based upon the needs for improvement of the community. The major trends in the model are: 1) improvement of the quality of life and 2) improvement of the agricultural productivity and marketing.

Curriculum in Vocational Education

It will be helpful for the purpose of the study to define the terms vocation and vocational, which are the basis for developing curriculum in the secondary school.

Webster's Dictionary (36, p. 1301) defines vocation as "a summons or strong inclination to a particular state or course of action." On the other hand, the concept "vocational" as defined by the same source says, "of, relating to, or being in training in a skill or trade to be pursued as a career."

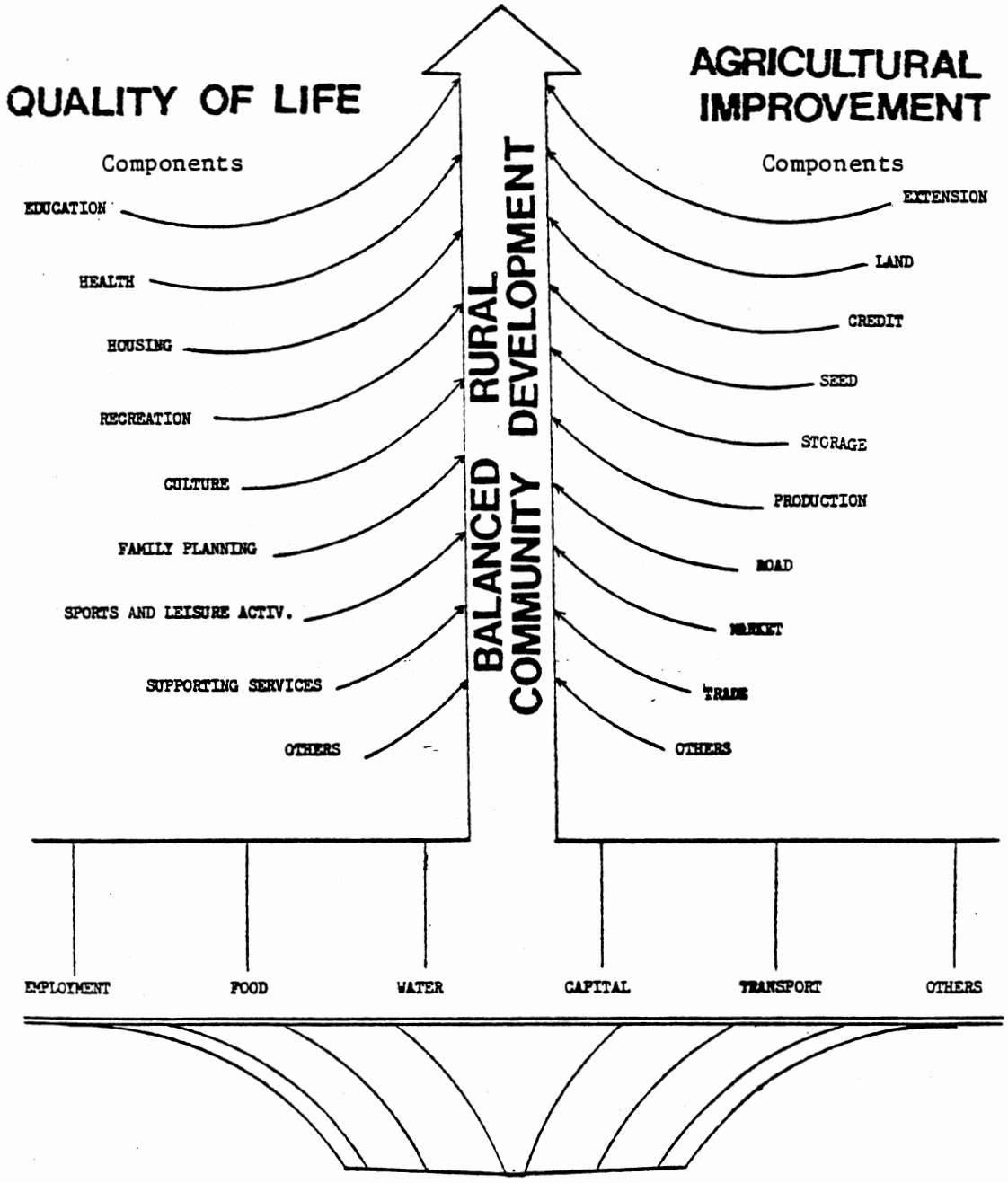


Figure 3. Schematic Presentation of the Concept of Balanced and Integrated Rural Community Development

Both concepts are considered as guides to determine the level of performance that the learner has to achieve in order to reach the goals established by curriculum planners. On the one hand it will be perceived as the direction the student must follow in regard to his own aspirations, goals, and objectives, and on the other, the kind and amount of knowledge considered necessary by the curriculum planner for the student to pursue his career.

At the level of vocational education, a different orientation will be found. In the case of this study, vocational agricultural education will be the focus.

At the vocational level, teachers need to become more familiar with more basic knowledge, which is provided by studying the factors that influence the curriculum, the process of learning, the experiences of vocational education students and the phenomena occurring outside the school. All these elements could be integrated into one objective, or as Halterman states (37, p. 41) "to develop the ability to secure satisfactory placement and to advance in an agricultural occupation through a program of continuing education." This objective is concerned with the extent to which candidates of vocational and technical education programs are able to make a contribution to the society in the work they are prepared for.

Curriculum in Vocational Agricultural Education in Venezuela

Vocational agricultural education in Venezuela began more than four decades ago, through the initiative of the Ministry of Agriculture and Livestock, before attempting to contribute to the economic, social, and cultural development of the country at the rural level. Since 1960, with the promulgation of the Agrarian Reform, the Ministry of Agriculture and Livestock planned the actions to create primary schools in agriculture, which have served as a reference point for introducing programs and plans established at different levels of education. It was not until 1969 that the government decided to change the curricula for secondary agricultural education. The new conception, according to an analysis made by Perez-Olivares (38) in 1980, caused some problems. A common element found was the administration of more than one type of curricula in the same school, a situation which, in the words of the same Ministry of Education (23, p. XXXVII) conveyed the fact that any weakness in the "Areas of exploration in the basic cycle and diversified cycle plans of study caused an even greater decrease in the quality of hand labor." This situation adds to the problem of the lack of planning of the learning process, which often does not consider real environmental situations upon which to structure the curricula, and, in many cases, the low level of estimation of agricultural professions by laymen in the developing countries

enhances the pre-stated problems. The end result becomes an undesirable situation of distorted curriculum planning and implementation, which, generally speaking, becomes innapropriate as far as people participation is concerned.

In the opinion of Lidia Aran and others (20, p. 34) spefically in the case of Venezuela, "vocational education does not necessarily produce productive orientation or innovative responses to the challenge of change." Citing the same author and following the same line of reasoning applicable to the agricultural vocational education in Venezuela, "the emphasis on technical and vocational seems to have done very little to improve performance in technical roles, or even to channel manpower into productive occupational roles" (20). Nevertheless, governmental institutions and agencies in charge of establishing the policies to be transmitted to different regions, continue making their greatest efforts to minimize those undesirable forces which worsen the inflationary stage of the modern world. This effort can be seen in the development of regional plans which provide a sense of faith which, in turn, could be transformed into tangible dividends. All this hinges upon the cooperation and collaboration among the members of the community, including public and private institutions, with the rational utilization of the great quantity of resources existing in the whole country. The final document extracted from the colloquy held by Latin American Ministries of Education (39, p. 29) regarding rural educational planning briefly points out that the contribution of

the planning process has not contributed to changing the panorama, including those policies related to education and, specifically, rural education.

Meanwhile, there are some exceptions where the work has concentrated on isolated diagnostics and integral developmental plans. Another point emphasized in the colloquy was the scarcity of research in curriculum for rural areas. Even in those cases where it does take place, according to the report, those investigators "follow the same model of relationships given to planning and administrative processes, they are not participative and are vertical." This means that the articulation, if there be any at all, does not support the amount and quality of instruction required to fulfill the level of competence expected from the individual after he/she has left the school.

As was established previously, the government, in 1969, decided to change the structure of secondary education, creating a system whereby this level would be composed of two cycles: a "basic" cycle and a "diversified" cycle. This new system was supported by two basic ideas: first, to provide opportunity to those students who obtained the diploma as "Perito Agropecuario" to continue in the formal system of education, having access to higher education, by giving them a diploma of "Bachiller agricola," and, second, to improve the quality of the students graduating from secondary schools including agricultural education. However, problems arose when it was detected that the fruits expected by planners and

other specialists in the field of education were not what they wanted. A vast majority of the "Bachilleres agricolas," instead of going to join the labor force, decided to continue their studies in higher education, looking for better positions within the occupational structure. In spite of these adverse situations, new schools were opened, more facilities created, and better incentives offered to the middle-class workers in agriculture, including teachers.

The last attempted reform was made in 1979. The new change in the structure of the curriculum for secondary education was divided into two specific cycles, designated as basic and professional, with a length of three and two years, respectively.

Curriculum in Animal Science

Animal science, like any other field, changes every day, creating challenges for those involved in agricultural education, especially vocational agricultural education. Actually, there is such a vast configuration of information available that it would be very difficult for any teacher attempting to build his/her curriculum to select the most appropriate areas in terms of quality without being in contrast with the specific competencies needed for effective instruction. Amberson (40, p. 17) pointed out, in relation to animal science program planning, that years ago teachers instructed in such a manner that "approved practices were often limited to production and did not consider the knowledge, skills, or experiences

necessary in financing or marketing animals." These approved practices were translated in a compact body of information broadly conceived and, in many cases, very far from reality. Paton (41) in a relevant study to determine the acceptance and usefulness of the basic-core curriculum in Oklahoma, points out that situations such as adequate and relevantly organized instructional materials that assist the teachers to meet the needs of the students has propitiated the opportunity for them to organize, structure, and develop a curriculum which has been accepted by the community in Oklahoma. B. M. Gwarzo (42, p. 151) points out that "Teachers indicated that the curriculum should reflect the needs and concerns of the student and the society." Thus, this structure tends to ensure the quality of education and should, in many ways, be applicable to other countries regarding the planning, development, implementation, and evaluation.

Vocational education in animal science, like any other curriculum component in agriculture, must be based on the principle of "learning by doing" corroborated by the same study mentioned in previous lines. Considering this point, one of the most prominent authorities in the field of education, Dewey (43, p. 10) states, "Sound educational experience involves, above all, continuity and interaction between the learner and what is learned."

The relevance of the content in regard to the experiences needed by students in animal science should be translated in practical and understandable tools. Thus, the denominated

performance objectives or competency-based instruction would be clearly defined, serving as a guideline for teachers and students within the context of curriculum.

In an analysis and a program conducted at Michigan State under the support of the Michigan F.F.A. Association called "a commercial outlet for F.F.A. market livestock with an educational experience of each student," LeCureaux says (44, p. 7) that "with performance objectives playing a larger role in the educational process, they become an effective tool for program and student evaluation." As an example, the same author explained, the different kinds of experiences that could be incorporated into the curriculum components in animal science by carefully extracting those experiences that really need to be learned, and by organizing them in such a manner that the student, who is the overall focus of instruction, can obtain a high qualified amount of knowledge and skills and can develop a positive attitude toward the profession he/she is seeking. Therefore, the key of a successful curriculum is the integration of cognitive, psychomotor, and affective domains in one homogeneous structure to guarantee the success of the individual through the learning process and, consequently, better results on the job. This integration of factors is presented by Polson (45, p. 17) in his model combining the competencies in each of the affective skill areas, namely, conceptual, self-assessment, and interpersonal skills, with competence in technical skills in order to produce overall vocational competency.

Functions and Structure of Vocational Education in Venezuela

Article No. 23 in Chapter IV of the Ley Organica de Educacion (19, p. 7) establishes the length of study for secondary and professional education, which has to be no less than two years after completion of the "basic school." At the same time, the Article specifies the objective of secondary education, summarized by the idea of improving the integral development of the students initiated in previous levels. Particular attention is given to the opportunity offered for career selection or further studies in higher education.

After the individual completes the requirements at the secondary level, the diploma of "Bachiller" or middle technician, if he/she is in technical education, is provided.

The main goal of vocational agricultural education, including animal science, as it is elaborated by Aguilera (2, p. VI-61) is to prepare the individual professionally by providing opportunities for the acquisition of knowledge, abilities, and skills needed to enter and be successful in any of the fields of agriculture. To accomplish this goal, it has been necessary to implement different types of plans and programs, nationally and regionally. Actually, according to La Cruz (35, p. 123) the three types of curriculum content which are functioning in the secondary agricultural education system now are: (1) the diversified cycle with optional nucleus, (b) the semester credit systems, and (c) the agricultural technical schools.

Unfortunately, none of these curricula structures has been able to satisfy the aspirations of planners, receivers, and executers. This is attributable, in many cases, to the great divorce existing between instruction and reality. Apparently, the reasons mentioned by some Venezuelan agricultural and educational specialists, supported by the experience accumulated by the researcher in various years, are grouped in areas such as excessive theoretical instruction, lack of incentives for vocational agricultural teachers, low level of participation of the community, insufficient public and private investments, and the great separation between curriculum content and the nature of practical experiences in the trends in agribusinesses.

Considering these undesirable situations, the government has stipulated in the VI National Plan (46, p. 5), among other actions: 1) to promote a permanent revision of secondary and professional programs and curricula and to design flexible plans of study and training programs according to the needs, and 2) to intensify efforts toward the improvement of instruction and training of qualified workers, middle technicians, and professionals needed to support developmental projects in areas considered as priorities within the agricultural industry.

Another element cited by the government as a key factor in changing the traditional strategies established in agricultural education to prepare qualified workers is to provide more and better education in rural areas. The same source

of information (46, p. 120) remarks that in the field of educaton, it is found that the rate of proportion of illiterate workers in rural areas is higher in relation to the national average. At the national level, only 15 percent of the total population is illiterate, meanwhile, in the rural area, the percentage is 31.6.

For a broad idea of the distribution of the curriculum content in agricultural education in Venezuela, the reader is directed to Tables VI, VI, VII, VIII, and IX. In establishing a correlation among these three types of curricula toward the distribution and types of subjects, it is worth mentioning that there is not a great deal of difference. Although the variabilities are not perceptible in a broad sense, in the researcher's judgment, the changes apparently have not been profound enough in those aspects which make a plan of study a successful one. For instance, planning competency-based development of instructional objectives in training-service for vocational agricultural teachers, maximum utilization of available resources, community relationships, lack of library, and deficient economic resources are not considered in the entire learning process.

All secondary agricultural schools have certain minimum resources to satisfy the needs of curriculum implementation. In the Venezuelan case, including the central-western region, they are the following:

1. Buildings, land, and adequate agricultural equipment to support the instruction of livestock production. The

TABLE V

PLAN OF STUDY IN AGRICULTURAL EDUCATION
BY DIVERSIFIED CYCLE

Courses	Week Hours 1st Year	2nd Year	3rd Year
Common Core Areas for All Majors			
Spanish and Literature	3	-	-
Mathematics	4	-	-
History of Venezuela	4	-	-
Geography of Venezuela	-	3	-
English	3	3	-
Physical Education	1 + 1	1 + 1	-
Professional Core Areas Majors			
Animal Science Plant Science Agric-Mechanics			
Biologic Sciences	4 + 2	4 + 2	-
Mathematics	-	4	-
Physics	4 + 2	4 + 2	-
Chemical	4 + 2	4 + 2	-
Agricultural Mechanics	-	-	-
General Agricultural	3	-	-
General Zootechnics	3	-	-
Agricultural Economic	-	-	4
Natural Resources Conservation	-	-	3
Optional Nucleus	-	6	17
Training Experience	-	-	11
TOTAL	24	32	35

Source: Gaceta Oficial No. 30.125 - Junio 1973 (47, p. 5)

TABLE VI

COMPOSITION OF OPTIONAL NUCLEUS BY MAJORS

Animal and Plant Science and Agriculture Mechanics	
Majors:	Animal Science and Plant Science Optional Nucleus: Forage
Majors:	Plant Science and Agriculture Mechanics Optional Nucleus: Irrigation and Drainage Enterprise: Soil, Topography, Irrigation, and Drainage
Major:	Animal Science Livestock Care and Management Swine Production Poultry Science Food Process Technology
Major:	Plant Science Sugar Cane Coffee Horticulture Fruitful Leguminous Cereal Textile

Source: Gaceta Oficial No. 30.125 - Junio 1973 (47, p. 6).

TABLE VII

PLAN OF STUDY OF SECONDARY AGRICULTURAL EDUCATION BY PLAN FOR SEMESTER-CREDIT

Majors: Animal Science - Plant Science
Common Semesters

Courses	Week Hours			
	1st Semester		2nd Semester	
	Theory	Practice	Theory	Practice
Spanish and Literature	3	-	-	-
Mathematics	4	-	3	-
History of Venezuela	3	-	-	-
Geography of Venezuela	-	-	3	-
English	3	-	-	-
Physical Education	-	2	-	-
Chemical	2	3	2	3
Botany	2	3	2	3
Zoology	2	3	-	-
Physics	-	-	2	3
General Agriculture	-	-	2	3
General Zootechnics	-	-	2	3
Agricultural Mechanics	-	-	2	4
Extra-Academical Area	-	2	-	2
TOTAL	19	13	18	21

TABLE VII (Continued)

MAJOR: ANIMAL SCIENCE

Courses	Week Hours							
	3rd	Sem.	4th	Sem.	5th	Sem.	6th	Sem.
Applied Chemical	2	4						
Soil and Fertilizers	3	3						
Introduction to Agricultural Research	2							
Agricultural Economics	2	2						
Animal Anatomy	2	2						
Animal Physiology	2	2						
Natural Resources Conservation			2	2				
Topography			2	3				
Food Conservation			2	2				
Livestock, Care, and Management I, II, III			2	4	2	4	2	4
Animal Health			2	2				
Animal Feeding			2	3				
Agricultural Extension					2	2		
Rural Legislation					2			
Rural Administration					2	2		
Irrigation and Drainage					2	3		
Rural Construction					2	2		
Forage Crops					2	3		
Animal Improvement							2	2
Occupational Experience Program								20
Elective								
Extra-Academic Area	2							
TOTAL	13	15	12	16	14	10	6	30

TABLE VII (Continued)

MAJOR: PLANT SCIENCE

Courses	Week Hours 3rd Sem. T	P	4th Sem. T	P	5th Sem. T	P	6th Sem. T	P
Applied Chemical	2	4						
Soil and Fertilizers	3	3						
Introduction to Agricultural Research	2							
Agricultural Economics	2	2						
Plant Propagation	2	2						
Plant Physiology	2	3						
Natural Resources Conservation			2	2				
Topography			2	3				
Crops I, II, III, IV			2	4	2	4	4	8
Meteorology			2	2				
Entomology			2	3				
Plant Pathology			2	3				
Agricultural Extension					2	2		
Rural Legislation					2			
Rural Administration					2	2		
Irrigation and Drainage					2	3		
Rural Construction					2	2		
Weed Crop Plan Control					2	2		
Training Experience								20
Extra-Academic Area		2						
Elective							2	4
TOTAL	13	16	12	17	14	15	6	32

Source: Ministerio de Educacion, Resolucion No. 8 - 1978 (48, pp. 2-4).

TABLE VIII

PLAN OF STUDY FOR AGRICULTURAL TECHNICAL SCHOOLS' BASIC CYCLE

Courses	1st Year Week Hours		2nd Year Week Hours		3rd Year Week Hours	
	Student	Teacher	Student	Teacher	Student	Teacher
Spanish and Literature	4	4	4	4	3	3
Mathematics	4	4	4	4	3	3
Geography and History	4	4	4	4	3	3
Biological Sciences	2 + 2	6	2 + 2	6	2 + 2	6
Chemical	-	-	-	-	2 + 2	6
Physics	-	-	-	-	2 + 2	6
English	3	3	3	3	3	3
Social, Moral, and Civic Formation	1	1	2	2	-	-
Physical Education	2	4	2	4	2	4
Artistic Education	-	-	2	2	-	-
Agricultural Formation (*2)						
Agriculture	5	10	5	10	4	8
Livestock	5	10	5	10	4	8
Agricultural Mechanics	4	8	4	8	6	12
TOTAL	36	54	39	57	40	62

(*1 and *2) Courses divided into two groups.

Source: Ministerio de Educacion, Resolucion No. 53, 1978 (49, p. 1).

TABLE IX

PLAN OF STUDY FOR AGRICULTURAL TECHNICAL SCHOOLS' BASIC CYCLE (PLANT AND ANIMAL SCIENCE MAJORS)

Courses	1st Year Week Hours		2nd Year Week Hours	
	Student	Teacher	Student	Teacher
Common				
Spanish and Literature	3	3		
Mathematics	4	4	3	3
History of Venezuela	4	4		
Geography of Venezuela			3	3
English	3	3		
Physical Education	1	2	1	2
Physics	2 + 2	6	2 + 2	6
Chemical	2 + 2	6	2 + 2	6
Rural Constructions	3	6		
Agricultural Extension			3	3
Agricultural Administration			2	2
Conservation of Natural Resources			2	2
Elective			3	6
Training Experience*				20
Plant Science (1)				
Forage	2	4		
Soil and Fertilizers	2 + 2	6		
General Crops Plants	4	8	6	12
Plant Pathology and Entomology			2 + 2	6
Topography, Irrigation and Drainage			2 + 2	6
Plant Anatomy and Physiology	2 + 2	6		
Animal Science (2)				
Biological Sciences	2 + 2	6		
Animal Anatomy and Physiology	2 + 2	6		
Animal Improvement			3	3
Livestock Care and Management	4	8	4	8
Forage			3	6
Food Process Technology			4	8
TOTAL (Each Major)	(1) 40 (2) 38	(1) 58 (2) 54	(1) & (2) 39	(1) 77 (2) 78

*Minimum 6 Weeks

Source: Ministerio de Educacion. Planes de Estudio 1980-81 (50,pp. 2-3).

practical experience within the learning process takes place through the development of small projects. However, these do not provide an opportunity for every single student to be actively involved.

2. Some of the basic health services provided by the school are the attentions of a physician, nurse, and dentist.

3. Scholarships.

4. Cafeteria and food services.

5. The administrative structure, in general terms, is integrated with the following parts: director (principal), subdirector, coordinators, and individual departments, including control and registration, evaluation, orientation, agricultural department, and non-agricultural teacher's department.

CHAPTER III

RESEARCH METHODOLOGY

The major purpose of this study was to determine the nature and extent of participation of nine selected groups in the development and implementation of curriculum in animal science in four vocational agricultural high schools of the central western region of Venezuela. A concomitant purpose was to determine the level of perceptions of these groups regarding the adequacy of the present curriculum and to obtain suggestions for a revised curriculum.

This chapter includes the various components of the study designed and utilized by the researcher to secure the information by which the main aims were achieved, and providing answers to research questions, following the line of thought of Kerlinger (51, p. 301) when he established that "Any research plan is deliberately and specifically conceived and executed to bring empirical evidence to bear on the research problem." Thus the succeeding parts of this chapter are: the definition and selection of population and sample, a specification of the research instrument, the procedures utilized in data collection and analysis, and finally, the statistical tool used in manipulating gathered data.

Population

The distribution of the number of secondary agricultural schools in Venezuela as it is shown in Table X, spread out through the whole country corresponding to the four states which integrate the central-western region a total of eleven. Of these, only five include an animal science curriculum. These schools are: San Luis in Falcon State, Mayorica and Minas de Aroa in Yaracuy State, Aregue in Lara State, and Agua Blanca in Portuguesa State.

The population of this study comprises nine groups of subjects, stratified as shown in Table XI:

1. Teachers, current sutdents, graduates, parents, farmers, and administrators in the four schools of the central-western region of Venezuela which administer animal science curricula.
2. University professors from the Instituto Universitario Pedagogico de Barquisimeto.
3. National Supervisors.
4. Regional Supervisors.

Selection of the Sample

The sample of this study included four schools and the total of 313 subjects. The four states: Lara, Portuguesa, Yaracuy, and Falcon were chosen because they integrate one of the nine geographical regions of Venezuela where vocational agricultural education has been considered a vital part of the economic development.

TABLE X

HIGH SCHOOLS OF AGRICULTURAL EDUCATION IN VENEZUELA

			Majors					Systems		
	School	State of Location	Animal Science	Plant Science	Food Process Technology	Agric. Mechanics	Fishing & Seafood Processing	Diversified Cycle	Credit Semester	New Technical School
1.	Gervasio Rubio	Tachira	X	X				X	X	X
2.	S. Jose de Volivar	Tachira	X	X					X	
3.	Tulio F. Cordero	Tachira	X	X					X	
4.	F. Aramendi	Apure	X						X	
5.	D. E. Chacon	Apure	X						X	
6.	J. Nucete Sardi	Merida		X					X	
7.	E. Baptista	Trujillo	X	X				X	X	X
8.	S. de Mendoza	Trujillo	X	X				X	X	X
9.	San Luis	Falcon	X	X				X	X	X
10.	S. J. de L. Cayos	Falcon								X
11.	Aregue	Lara	X						X	
12.	Cuara	Lara		X					X	
13.	F. Medina	Lara		X					X	
14.	Turen	Portuguesa		X					X	
15.	Agua Blanca	Portuguesa	X	X				X	X	X
16.	Crisanto Lacruz	Portuguesa		X					X	
17.	Ospino	Portuguesa								X
18.	Mayorica	Yaracuy	X	X						X
19.	Minas de Aroa	Yaracuy	X	X						X
20.	San Carlos	Cojedes				X			X	
21.	Calabozo	Guarico	X	X					X	
22.	Henry Pittier	Guarico		X				X	X	X
23.	S. Barbara	Zulia								X
24.	Machiques	Zulia	X						X	
25.	El Tigre	Anzoategui	X	X					X	
26.	R. Penalver	Anzoategui	X	X					X	
27.	S. Guevera y Lira	Anzoategui	X	X				X	X X	X
28.	La Pica	Monagas	X	X				X	X	X
29.	E. L. Contreras	Bolivar	X						X	
30.	G. Mohedano	Bolivar	X						X	
31.	Caicara	Bolivar	X						X	
32.	J. P. de Leon	Miranda	X	X					X	
33.	C. Sanda	Carabobo	X	X					X	
34.	Alpargaton	Carabobo								X
35.	M. Borras	Carabobo								X
36.	Gonzalito	Aragua		X					X	X
37.	A. A. Larriva	Barinas		X					X	
38.	E. de Pesca	Sucre			X		X		X	
39.	Cumanagotos	Sucre								X
40.	Tucupita	T. F. D. Amacuro								X

Source: Review of Curriculum for Voc-Ag Education in Oklahoma State, USA, With Alternatives to Voc-Ag Programs in Venezuela. Pastor Perez-Olivares (38, p. 24).

TABLE XI

TARGET POPULATION PARAMETERS AND SAMPLING

Group	Size (N)	Sample to be Interviewed (N)	Percent of Group Population (%)
Animal Science Current Students	120	120	100
Graduates	320	80	25
Parents	120	90	75
Farmers	150	40	25
Teachers	40	40	100
Administrative Personnel	12	12	100
University Professors	5	5	100
National Supervisors	4	4	100
Regional Supervisors	1	1	100
TOTAL	772	392	

Table XII shows the distribution of the subjects according to groups categorization. The current-student group totaled 107. Only students in their final year of school were selected, assuming that these students were acquainted with the total curriculum in animal science.

Of the entire sample of 392 individuals, 313 responded with completed questionnaires, yielding a return of 79.85 percent. Of the 313 instruments returned, the number and percentage of the expected returns for identified groups were as follows: current students, 107 (89.17%); graduates, 63 (78.75%); parents, 61 (67.78%); farmers, 39 (97.5%); teachers, 28 (70.0%); administrative personnel, 7 (58.33%); university professors, 5 (100.0%); national supervisors, 2 (50.0%); regional supervisor, 1 (100.0%). (See Table XII.)

Instrument Development

The instrument developed for the purpose of this study was based on the analysis and interpretation of the core curriculum of the State of Oklahoma for vocational agricultural education and the curriculum for animal science established for the secondary agricultural education in Venezuela, developed by Perez-Olivares in 1980 (39).

Eight basic questions were contained in 20 items and were further reduced by combination into only 4 areas, designated as 1) Nutrition, 2) Health, 3) Management, 4) Reproduction (see Appendix B).

TABLE XII

DISTRIBUTION OF THE SAMPLE BY SCHOOLS AND GROUPS OF SUBJECTS

	Expected Sample	Schools								Gathered Sample	% of Expected Sample
		San Luis		Aregue		Mayorica		Agua Blanca			
		(N)	(%)	(N)	(%)	(N)	(%)	(N)	(%)		
Current Students	120	28	26.17	19	17.76	25	23.36	35	32.71	107	89.17
Graduates	80	24	38.10	14	22.22	12	19.04	13	20.63	63	78.75
Parents	90	11	18.03	10	16.39	30	49.18	10	16.39	61	67.78
Farmers	40	16	41.03	09	23.08	08	20.51	06	15.38	39	97.50
Teachers	40	08	28.57	08	28.57	08	28.57	04	14.29	28	70.00
Administrative Personnel	12	02	28.57	03	42.86	02	28.57	-	-	07	58.33
University Professor	5	-	-	-	-	-	-	-	-	05	100.00
National Supervisor	4	-	-	-	-	-	-	-	-	02	50.00
Regional Supervisor	1	-	-	-	-	-	-	-	-	01	100.00
TOTAL	392	89	28.43	63	20.13	85	27.16	68	21.75	313	79.85

TABLE XIII

SCALES OF VALUES APPLIED TO RESPONSE CATEGORY

Questions No. 1 and 2:		Absolute Limits
Scale:	Never	0.5 - 1.49
	Seldom	1.5 - 2.49
	Sometimes	2.5 - 3.49
	Frequently	3.5 - 4.49
	Always	4.5 - 5.49

Question No. 3:		
Scale:	None	0.5 - 1.49
	Little	1.5 - 2.49
	Somewhat	2.5 - 3.49
	Much	3.5 - 4.49
	Excessive	4.5 - 5.49

Questions No. 4 and 5:

Low Mastery				High Mastery
1	2	3	4	5

Questions No. 6 and 7:

To facilitate the process of analysis and interpretation of data regarding these two questions, it was necessary to convert the negative scale to a positive one in the following manner:

Negative				Positive
-2	-1	0	1	2

Negative Scale		Positive Scale
-2	=	1
-1	=	2
0	=	3
1	=	4
2	=	5

$X = A + 3$

X: Positive Value

A: Negative Value

TABLE XIII (Continued)

Question No. 8:

Low Level of Competence				High Level of Competence
1	2	3	4	5

Question No. 9:

It was an open question. See Appendix B.

Gathering Data Process

Due to distance and communication problems, it was necessary that the researcher travel to Venezuela in January, 1982 and spend two months traveling through the central-western region, personally gathering data.

The groups of students in each of the four schools were interviewed in groups, directions were given in a written manner, and supplemented with oral explanations.

The farmers were selected from the areas through the association of producers located nearby the schools.

Parents were selected considering the students that were enrolled in the last year of study in each school. In the case of San Luis School, telegrams were sent to the parents, since not all of them live within the area of influence of the school.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

This study was planned and carried out as an attempt to determine the nature, extent, and level of perceptions held by selected groups of subjects comprised of teachers, current students, graduates, parents, farmers, administrative personnel, university professors, and national and regional supervisors as to their involvement in curriculum planning and development.

These identified groups, which, according to many specialists in the field of education, are often referred to as planners, receivers, and executers, each term thus providing a condensed descriptor of the roles which must be played out within the educational structure.

The process of gathering data was made possible through use of a carefully structured questionnaire, described in Chapter III, Research Methodology.

The focus of this chapter is to analyze and interpret collected data in keeping with the objectives of the undertaking. In addition to the major goals and objectives to be achieved through the investigation, several other findings

were derived, which were not distinctly recognized during the initial planning stage, for example, the extent of communication among groups and alleged constraints of distance and geographical isolation.

Extent of Returns

Of the entire sample of 392 individuals, 313 responded with completed questionnaires, thus yielding a percentage of 79.85 of the expected sampling. Within the 313 schedules returned, the number and percentage of the expected returns for identified groups were as follows: current students, 107 (89.17%); graduates, 63 (78.75%); parents, 61 (67.78%); farmers, 39 (97.5%); teachers, 28 (70.0%); administrative personnel, 7 (58.3%); university professors, 5 (100.0%); national supervisors, 5 (100.0%); regional supervisor, 1 (100.0%). (See Table XI.)

Using what was considered an appropriate statistical tool, all data were collated, treated, and analyzed for differences among mean scores regarding the nature and extent of involvement of individuals comprising the several groups. Therefore, the attempt was made to determine differences between groups as to the extent of their involvement in designing, planning, and implementing the vocational agriculture high school animal science curriculum. These perceptions of several groups were also compared as to how they perceived classroom instruction (largely theory and laboratory) as affecting or influencing level of knowledge and

skills (cognitive and psychomotor domains) of students pursuing studies in animal science.

The investigation was further designed to determine differences between groups as to perceptions of how educational experiences occurring outside (largely practice) the classroom--on the school, farm, home, or surrounding community--might affect or influence these same students in terms of developing behavioral characteristics of attitude, mood, or interests (affective domain). Differences were also determined in terms of respondents' perceptions as to the extent study in the classroom (theory) may influence.

Extent of Involvement in Curriculum Planning and Development

San Luis School

For the area of Livestock Nutrition, all groups (current students, graduates, parents, farmers, and teachers) responded in such a manner that mean scores for each group, except that of parents, fell within the absolute limits established for the category of "seldom." Responses of parents for the Nutrition area fell within the category indicating "never." (See Table XIV.)

For the area of Livestock Health, two groups, current students and teachers, gave responses in which mean scores fell within the category of "sometimes." Two other groups, graduates and farmers, indicated involvement as "seldom."

TABLE XIV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

School: San Luis					
Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
			Mean		
Nutrition	1.917	1.903	1.121	1.521	2.233
Health	2.661	2.083	1.197	1.729	2.683
Management	2.149	1.6888	1.015	1.563	2.267
Reproduction	2.900	1.908	1.036	1.588	2.700
Grand Mean	2.403	1.896	1.093	1.600	2.473

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently (3 5-4.49); Always (4.5-5.49).

Responses by the remaining group, parents, indicated that in their perceptions, they were "never" involved.

For the Livestock Management area, current students and teachers gave responses in which mean scores fell within the category of "sometimes." This is readily compared to responses given by graduates and farmers, who agreed that in their perceptions they felt their involvement in curriculum planning have been only "seldom." The remaining group, parents, were firm in the response that they had "never" been involved. Data prompting these conclusions can be seen in Table XIV.

For the area of Livestock Reproduction, groups made up of current students and teachers responded in such a manner that mean scores for each of these groups fell within limits of the category expressing "sometimes." By examination of the same data showing group means for graduates and farmers, it was evident that, by their perceptions, they were "seldom" involved. Responses by the group of parents showed again they felt they were "never" involved.

It should be noted further that when responses expressed by current students, graduates, parents, farmers, and teachers are examined as a combined group, their mean scores do not exceed the category of "seldom." Therefore, the conclusion must be made that no significant differences occur between groups. These conclusions are borne out by examination of data presented in Table XIV.

Mayorica School

For the area of Livestock Nutrition, responses of four of the five groups (current students, graduates, parents, and farmers) fell within limits established for the category "never." The remaining group, teachers, indicated involvement as being "seldom."

For the area of Livestock Health, only responses of teachers and current students indicated perceptions of an involvement as high as "seldom."

The other three groups (graduates, parents, and farmers) gave responses falling strictly within the category of "never."

For the area of Livestock Management, the responses of groups comprised of current students, graduates, parents, and farmers focus in the "never" category. The residual group, teachers, revealed that by their perceptions the involvement level was "sometimes."

Data presented in Table XV regarding Livestock Reproduction show that current students and teachers considered their involvement in curriculum development as only "seldom." It would seem important to point out that the only very slight difference in group mean scores among the three groups comprised of graduates, parents, and farmers is such as to strongly indicate that each respondent group alike characterize the extent of their involvement as "never."

TABLE XV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

School: Mayorica					
Areas of Animal Science Studies	Current Students N = 25	Grad-uates N = 12	Parents N = 30	Farmers N = 8	Teachers N = 10
Nutrition	1.293	1.194	1.000	1.000	2.067
Health	1.727	1.319	1.122	1.000	2.500
Management	1.280	1.347	1.000	1.000	1.967
Reproduction	1.648	1.250	1.000	1.000	2.300
Grand Mean	1.487	1.278	1.031	1.000	2.208

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always (4.5-5.49).

It should be noted that examination of data showing responses of all five groups reveals that none of them exceeds the absolute limits of the "seldom" category, and further that responses of parents and farmers localized at the "never" category. These findings are further presented in Table XV.

Aregue School

Examination of data shown in Table XVI with regard to the Livestock Nutrition area clearly shows that students, parents, and farmers agree, with responses falling well within limits established for the category of "never." Contrasting the other two groups, made up of graduates and teachers, fell within the category designated as "seldom."

With regard to the area of Livestock Health, some differences were shown among the five groups, with their perceptions localizing between the "never" category to the "frequently" category. The highest mean score indicating perception of involvement in curriculum development was given by graduates.

In the area of Livestock Management, findings clearly sustain the assertion by parents and farmers that in their perceptions they have "never" been involved. Contrastingly, current students, graduates, and teachers admit that they have only "seldom" been involved.

In regard to the Livestock Reproduction area, three groups (current students, graduates, and teachers) fell

TABLE XVI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

School: Aregue					
Areas of Animal Science Studies	Current Students N = 19	Graduates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	1.298	2.523	1.000	1.074	1.878
Health	1.438	3.214	1.000	1.018	1.984
Management	1.342	2.226	1.000	1.000	1.681
Reproduction	1.631	2.871	1.000	1.022	1.836
Grand Mean	1.427	2.708	1.000	1.028	1.845

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always (4.5-5.49).

within the category of "seldom," the remaining groups (parents and farmers) fell within the limits established for the "never" category.

It is evident that for all areas, the two groups comprised of parents and farmers perceive themselves as "never" being involved. It can be further noted that only groups made up of current students, graduates, and teachers fell in the "seldom" category with regard to opportunities for involvement. Perhaps this situation is more clearly understood because the three groups are integral components of the formal system of education, as contrasted to parents and farmers who never, or very rarely, are to be found at the school.

Agua Blanca School

Data shown in Table XVII reveal that one group, teachers, manifested belief in a higher level of involvement in four areas, Nutrition, Health, Management, and Reproduction, when their mean scores indicated as "frequently" were collated with the mean scores of the other four groups. Responses given by farmers fell precisely in the lowest category of absolute limits, the "never" category; this was true for each of the four areas. Current students, as shown by their responses, considered their involvement in Livestock Nutrition and Management as "never," and for Livestock Health and Reproduction, "seldom." For the remaining two groups (graduates and parents), responses fell within the limits of the "never" category.

TABLE XVII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 35	Graduates N = 13	Parents N = 10	Farmers N = 6	Teachers N = 4
			Mean		
Nutrition	2.133	1.462	1.000	1.000	2.750
Health	2.952	1.923	1.050	1.000	4.125
Management	1.762	1.321	1.017	1.000	3.667
Reproduction	2.720	1.754	1.040	1.000	3.600
Grand Mean	2.392	1.615	1.027	1.000	3.535

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always (4.5-5.49).

Extent of Involvement in Curriculum Implementation

San Luis School

For the area of Livestock Nutrition, the group composed of parents perceived themselves as having been "never" involved. Current students, graduates, farmers, and teachers as groups each gave responses whose mean scores fell within the category of "seldom."

For the area of Livestock Health, four out of five groups (current students, farmers, and teachers) provided responses which fell within the limits of the "seldom" category. Meanwhile, the remaining group, parents, responded that their involvement must be characterized as "never."

Data shown in Table XVIII call attention to responses obtained relating to Livestock Management record the fact that as being only "seldom." Graduates perceived the extent of their involvement to be precisely in the lowest absolute limit of the "sometimes" category, while the residual group, parents, revealed that in their perceptions, they are forced to respond that their involvement is "never."

Regarding the area of Livestock Reproduction, percep-perceptions among the groups of current students, graduates, and teachers manifested a slightly more extended involvement with mean scores indicated a categorization of "sometimes." Further, parents' responses fell within the category of "never,"

TABLE XVIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM IMPLEMENTATION

School: San Luis					
Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
			Mean		
Nutrition	1.952	2.778	1.091	1.521	2.333
Health	2.619	3.063	1.136	1.979	2.950
Management	1.732	2.507	1.121	1.542	2.250
Reproduction	2.864	2.858	1.146	1.688	2.840
Grand Mean	2.292	2.801	1.124	1.682	2.593

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always (4.5-5.49).

also reflecting the mean score of farmers as slightly higher at the "seldom" level.

Mayorica School

Analyzing data secured and shown in Table XIX relating to the area of Livestock Nutrition, one finds that parents and farmers perceived that they have "never" been involved, while the remaining three groups composed of current students, graduates, and teachers all agree that their involvement was "seldom."

When considering the area of Livestock Health, groups constituting current students, graduates, and teachers seem to consider themselves to be more involved, with their responses localized in the "sometimes" category. The other two groups, parents and farmers, responded in such a manner that mean scores tended to be localized within the absolute limits of the "seldom" category.

For the area of Livestock Management, responses from two groups, graduates and teachers, indicate perceptions that the extent of their involvement could best be described as only "sometimes," while responses of current students focus in the "seldom" category.

For the Livestock Reproduction area, two groups, graduates and teachers, responded in such a manner that their perceptions of involvement in curriculum development were only felt to be "sometimes." Groups made up of parents and farmers indicated that they feel they have "never" been

TABLE XIX

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM IMPLEMENTATION

School: Mayorica

Areas of Animal Science Studies	Current Students N = 25	Grad-uates N = 12	Parents N = 30	Farmers N = 8	Teachers N = 10
Nutrition	1.627	2.278	1.000	1.000	2.333
Health	2.580	2.931	1.083	1.250	3.350
Management	1.493	1.833	1.000	1.042	2.367
Reproduction	2.344	2.617	1.000	1.025	2.980
Grand Mean	2.011	2.415	1.021	1.079	2.758

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently (3.5-4.49); Always (4.5-5.49).

involved. The remaining group, current students, indicated "seldom" involvement.

Aregue School

An examination of data shown in Table XX, regarding the Livestock Nutrition area, reveals essential agreement between graduates and teachers since mean scores fall within the category of "seldom." The remaining three groups, current students, parents, and farmers, gave responses evidencing that they considered that they were "never" involved.

For the area of Livestock Health the relatively higher mean score of graduate respondents indicates that they felt they were involved only "sometimes." Contrastingly, parent and farmer responses were such as to fall within the category of never." Further, responses of the remaining groups, current students and teachers, reveal perceptions of "seldom" involvement.

For the area of Livestock Management, responses of parents and farmers showed perceptions of "never" involvement. Contrastingly, current students, graduates, and teachers characterized the extent of their involvement as "seldom."

For the Livestock Reproduction area, response groups made up of current students, graduates, and teachers recognize their level of involvement to be "sometimes." Again, parents and farmers clearly concentrate their responses within the "never" category.

TABLE XX

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM IMPLEMENTATION

School: Aregue

Areas of Animal Science Studies	Current Students N = 19	Graduates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	1.368	2.095	1.000	1.074	1.818
Health	1.711	3.119	1.000	1.074	1.924
Management	1.281	1.988	1.000	1.130	1.652
Reproduction	1.842	3.000	1.000	1.200	1.927
Grand Mean	1.550	2.551	1.000	1.120	1.830

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always 4.5-5.49).

Agua Blanca School

Data shown in Table XXI, in relation to the Livestock Nutrition area, denote current students, graduates, and teachers recognize their level of involvement as "sometimes." Still following the more common pattern of responses, parents and farmers localize within the limits of the "never" category.

For the area of Livestock Health teachers provided responses in such a manner that their involvement must be categorized as "frequently." The groups consisting of current students and graduates also advance their level of involvement in that they place their responses within the limits of the "sometimes" category. On the contrary, perceptions of parents and farmers continue in the category of "never."

For the area of Livestock Management, parent and farmer perceptions signify very clearly the extent of their involvement as "never." In a like manner, responses provided by current students and graduates expressly point out extent of involvement to be "seldom." The remaining group, teachers, provided aggregate mean scores which fell within the category of "sometimes."

Upon examination of these same data as presented in Table XX, one notices that the responses given by parents and farmers regarding Livestock Reproduction area indicates that the extent of their involvement as only "sometimes."

TABLE XXI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF THEIR INVOLVEMENT IN CURRICULUM IMPLEMENTATION

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 35	Graduates N = 13	Parents N = 10	Farmers N = 6	Teachers N = 4
			Mean		
Nutrition	2.000	2.256	1.000	1.000	2.833
Health	2.986	3.167	1.067	1.056	3.542
Management	1.605	1.731	1.000	1.000	2.875
Reproduction	2.651	2.892	1.020	1.067	3.050
Grand Mean	2.311	2.534	1.022	1.031	3.075

Scale Absolute Limits: Never (0.5-1.49); Seldom (1.5-2.49); Sometimes (2.5-3.49); Frequently 3.5-4.49); Always 4.5-5.49).

Self-Perceptions of Groups as to the
Importance of Their Involvement in
Curriculum Planning
and Implementation

San Luis School

Data presented in Table XXII, considering the Livestock Nutrition area reflects that only current students and teachers, individuals who are more closely related to work in the agricultural school, perceive the importance of their involvement as "somewhat." Contrastingly, graduates, parents, and farmers, not so closely related to the daily school routine, characterized the value of their involvement as "much." Therefore, one must conclude that desire for involvement seems more clearly manifested by groups who have, in the past, been rather remote from the instructional process.

For the area of Livestock Health, responses given by current students fall within the limits of the "somewhat" category. Graduates, parents, farmers, and teachers indicated the importance of their involvement as "much."

Considering the area of Livestock Management, groups consisting of current students and teachers characterized the importance of their involvement as "somewhat." The remaining three groups, graduates, parents, and farmers focus responses within the limits of the "much" category.

Regarding the Livestock Reproduction area, current students and teachers provided responses falling with the

TABLE XXII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND IMPLEMENTATION

School: San Luis					
Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
			Mean		
Nutrition	2.845	3.694	3.879	3.688	2.967
Health	3.375	3.903	3.939	3.979	3.500
Management	2.679	3.764	3.894	3.740	3.167
Reproduction	3.279	3.875	3.927	3.788	3.400
Grand Mean	3.044	3.809	3.910	3.799	3.258

Scale Absolute Limits: None (0.5-1.49); Little (1.5-2.49); Somewhat (2.5-3.49); Much (3.5-4.49); Excessive (4.5-5.49).

category of "somewhat," while the groups comprised of graduates, parents, and farmers again responded in such a manner that their desire for involvement must be denoted as "much."

Mayorica School

Data shown in Table XXIII, regarding the Livestock Nutrition area indicate current students, parents, farmers, and teachers considered the importance of their involvement as falling within the category of "much." The residual group, graduates, indicated by their responses that their perceptions must be circumscribed within the limits of "somewhat" category.

For the Livestock Health area, the responses of all five groups (current students, graduates, parents, farmers, and teachers) converged in visible agreement, consequently, for these respondents, the importance of involvement must be distinguished as "much."

For the area of Livestock Management, four of the five groups (current students, parents, farmers, and teachers) expressed their importance of involvement as "much." The remaining group, graduates, showed a slight difference in their perceptions compared with the other groups, indicating their perceptions as "somewhat."

For the Livestock Reproduction area, total agreement was observed among the five groups, hence, their perceptions must be denoted as "much."

TABLE XXIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND IMPLEMENTATION

School: Mayorica

Areas of Animal Science Studies	Current Students N = 25	Graduates N = 12	Parents N = 30	Farmers N = 8	Teachers N = 10
			Mean		
Nutrition	3.507	3.167	3.722	3.833	3.767
Health	4.187	3.625	3.972	4.271	4.467
Management	3.540	3.097	3.722	3.917	3.500
Reproduction	3.856	3.400	3.780	4.275	3.760
Grand Mean	3.772	3.322	3.799	4.074	3.873

Scale Absolute Limits: None (0.5-1.49); Little (1.5-2.49); Somewhat (2.5-3.49); Much (3.5-4.49); Excessive (4.5-5.49).

Aregue School

Data as presented in Table XXIV, in regard to Livestock Nutrition area, show responses of current students and teachers fall within the limits of the "somewhat" category, while the remaining three groups (graduates, parents, and farmers) responded that the importance of their involvement was "much."

For the area of Livestock Health, three of the five groups (graduates, parents, and farmers) gave responses falling within the absolute limits of the "frequently" category. The residual groups, current students and teachers, perceived their importance of involvement a little bit higher, when their responses were observed within the "somewhat" category.

By analyzing mean scores of respondents regarding the Livestock Management area, it was evident that the only group that considered their involvement "somewhat" important were teachers, while the other four groups (current students, graduates, parents, and farmers) manifested with very definite responses that their involvement must be associated with the category of "much" in the perception scale provided.

For the area of Livestock Reproduction, coincidental agreement was found between current students and teachers, when their mean scores fell within the absolute limits of the "somewhat" category. Responses provided by the remaining

TABLE XXIV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND IMPLEMENTATION

School: Aregue					
Areas of Animal Science Studies	Current Students N = 19	Grad-uates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	2.877	3.786	4.000	3.482	2.727
Health	3.439	4.167	4.000	3.870	3.076
Management	2.816	3.869	4.000	3.759	2.530
Reproduction	3.032	4.100	4.000	3.711	2.655
Grand Mean	3.041	3.980	4.000	3.706	2.747

Scale Absolute Limits: None (0.5-1.49); Little (1.5-2.49); Somewhat (2.5-3.49); Much (3.5-4.49); Excessive (4.5-5.49).

three groups (graduates, parents, and farmers) coincided in their perceptions, characterizing their importance of involvement as "much." It is very important to note that for the whole four areas, parents manifested a high level of importance when their mean scores were compared with the other four groups of respondents.

Agua Blanca School

Data in Table XXV regarding the Livestock Nutrition area evidences that all four groups of respondents (current students, graduates, farmers, and teachers) perceived their importance of involvement as "much," compared to responses by parents, who felt their importance of involvement had been just "somewhat."

For the Livestock Health area, similarity in responses was expressed by current students, graduates, farmers, and teachers, all falling within absolute limits of the "much" category. The remaining group, parents, considered their importance of involvement as "somewhat."

For the area of Livestock Management, responses of graduates, farmers, and teachers evidenced that their perceptions of the importance of involvement must be considered "much." Graduates and parents responded in such a fashion that they must be identified within the limits of the "somewhat" category.

Analysis of the data presented in Table XXV, related to the Livestock Production area, reveals that four of the five

TABLE XXV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND IMPLEMENTATION

School: Agua Blanca					
Areas of Animal Science Studies	Current Students N = 35	Grad-uates N = 13	Parents N = 10	Farmers N = 6	Teachers N = 4
			Mean		
Nutrition	3.410	3.692	3.000	4.222	4.083
Health	4.005	4.308	3.133	4.250	4.375
Management	3.419	3.718	3.000	4.222	3.875
Reproduction	3.646	3.954	3.060	4.233	3.950
Grand Mean	3.620	3.918	3.048	4.232	4.071

Scale Absolutes Limits: None (0.5-1.49); Little (1.5-2.49); Somewhat (2.5-3.49); Much (3.5-4.49); Excessive (4.5-5.49).

groups of respondents (current students, graduates, farmers, and teachers) denoted coincidential perceptions in relation to the importance of involvement criteria, identifying their mean scores with the category of "much." The residual group, parents, indicated "somewhat" important their involvement.

Assessment of the Extent of Student Mastery Knowledge of Selected Items

San Luis School

The data presented in Table XXVI regarding the Livestock Nutrition area reveals that two of the five groups (current students and teachers) agreed in their perceptions totalizing their estimations below the mean of the scale. For these respondents, knowledge must be characterized as "low mastery." Responses of the groups made up of graduates, parents, and farmers fall somewhat above the mean score of scale, thus, their perceptions of level of knowledge fall within the limits of "high mastery."

For the area of Livestock Health, four of the five groups (graduates, parents, farmers, and teachers) expressed clear agreement in their perceptions toward knowledge level in this area; their responses must be considered "high mastery." Yet, graduates' responses were observed as higher within the same category. At the same time, only respondents in a group comprised of current students showed a tendency to be below the mean score of the scale (3.0), thus, their perceptions were distinguished as "low mastery."

TABLE XXVI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF THE STUDENT MASTERY KNOWLEDGE OF SELECTED ITEMS

School: Majorica

Areas of Animal Science Studies	Current Students N = 28	Grad-uates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
Nutrition	2.226	3.097	3.212	3.375	2.467
Health	2.863	3.535	3.424	3.521	3.067
Management	1.863	3.056	3.318	3.281	3.783
Reproduction	3.057	3.483	3.618	3.350	3.100
Grand Mean	2.502	3.293	3.393	3.382	2.854

For the area of Livestock Management, responses of current students indicated perception of knowledge falling within the absolute limits of the "low mastery" category. In contrast, four of the five groups (graduates, parents, farmers, and teachers) responded in such a manner that their mean scores were characterized toward knowledge as "high mastery."

For the area of Livestock Reproduction, agreement was found among the five groups. Thus, they considered their perceptions toward knowledge acquisition as "high mastery."

Mayorica School

Data presented in Table XXVII, regarding the Livestock Nutrition area, shows all five groups of respondents localizing their perceptions about the level of knowledge below the mean of the scale, thus, their opinions must be considered "low mastery."

For the area of Livestock Health, four of the five groups (current students, graduates, farmers, and teachers) gave responses denominating the level of knowledge as "low mastery." At the same time, only parent responses considered "high mastery" knowledge in the students.

For the area of Livestock Management, all five groups characterized the level of knowledge of the animal science vocational students within the limits of the "low mastery" category. It is very important to point out that the lowest

TABLE XXVII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF THE STUDENT MASTERY KNOWLEDGE OF SELECTED ITEMS

School: Mayorica					
Areas of Animal Science Studies	Current Students N = 25	Grad-uates N = 12	Parents N = 30	Farmers N = 8	Teachers N = 10
			Mean		
Nutrition	2.200	2.611	2.811	3.000	2.333
Health	3.307	3.000	3.556	3.000	3.400
Management	1.973	1.694	2.472	2.542	2.217
Reproduction	3.240	2.950	3.353	2.950	2.880
Grand Mean	2.680	2.564	3.048	2.873	2.707

mean scores corresponded to the groups made up of current students and graduates.

For the area of Livestock Reproduction, current students and parents agreed in their perceptions, locating their mean scores within the limits of the "high mastery" category. On the contrary, perceptions of graduates, farmers, and teachers regarding knowledge acquired by students must be denominated as "low mastery."

Aregue School

Data presented in Table XXVIII, considering the Livestock Nutrition area, show parents as the only group of respondents who characterized the level of knowledge as "high mastery." The opinions of the other four groups (current students, graduates, farmers, and teachers) converged, denominating "low mastery" the same cognitive domain.

For the area of Livestock Health, all five groups estimated that the level of knowledge of the students is not the most desirable; therefore, they circumscribed their perceptions within the limits of the "low mastery" category. It should be noted that the lowest mean scored pertained to current students and teacher responses.

For the Livestock Management area, the "low mastery" category was considered the most appropriate characterization to be given to the level of knowledge of animal science students, manifested in a consensus extracted from examination of the mean scores of the five groups of respondents.

TABLE XXVIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF THE STUDENT MASTERY KNOWLEDGE OF SELECTED ITEMS

School: Aregue

Areas of Animal Science Studies	Current Students N = 19	Grad-uates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	1.702	2.548	3.333	2.926	2.424
Health	2.035	3.155	3.150	2.870	2.546
Management	1.237	2.071	2.617	2.852	1.894
Reproduction	1.968	3.029	3.140	3.000	2.636
Grand Mean	1.736	2.715	3.714	2.912	2.375

For the area of Livestock Reproduction, two out of five groups, current students and teachers, gave responses that clearly established "low mastery" knowledge of students. Responses provided by graduates, parents, and farmers situated their mean scores slightly above the mean score of the scale; therefore, their perceptions must be denoted as "high mastery."

Agua Blanca School

Of the data shown in Table XXIX, examination of the group means regarding the Livestock Nutrition area reflects that only teachers considered "high mastery" knowledge acquired by the students. The remaining groups, current students, graduates, parents, and farmers, gave responses falling within the category of "low mastery," corresponding the lowest mean score to current students.

For the area of Livestock Health, current students and teacher responses coincided. Thus, the level of knowledge was perceived as "high mastery." By contrast, graduates, parents, and farmers perceived that the level of knowledge of animal science students must be indicated as "low mastery."

For the area of Livestock Management, by data interpretation of mean scores of four out five groups of respondents (current students, graduates, parents, and farmers), agreement was evident among their perceptions, denoting the level of knowledge as "low mastery," Different convictions were

TABLE XXIX

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF THE STUDENT MASTERY KNOWLEDGE OF SELECTED ITEMS

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 35	Graduates N = 13	Parents N = 10	Farmers N = 6	Teachers N = 4
			Mean		
Nutrition	2.324	2.615	2.867	2.333	3.500
Health	3.095	2.897	2.433	2.667	4.000
Management	1.795	2.000	1.833	2.417	3.250
Reproduction	3.154	2.831	2.400	2.533	3.700
Grand Mean	2.592	2.586	2.383	2.487	3.613

observed in the teachers, who indicated "high mastery" knowledge.

For the Livestock Reproduction area, current student and teacher responses fall above the mean of the scale. Therefore, their perceptions about knowledge level was "high mastery." Not a big difference was appreciated among the groups made up of graduates, parents, and farmers. Nevertheless, contrary to the perceptions of the first two groups, these respondents considered knowledge as "low mastery."

It is important to point out that the teachers of this school is the only group that consistently maintained their appreciation of "high mastery" regarding the four areas of animal science studies.

Assessment of the Extent of Student Mastery Skills of Selected Items

San Luis

Data presented in Table XXX, regarding Livestock Nutrition area, indicate current students and teachers responded similarly in their perceptions as "high mastery" of skills. Graduates, parents, and farmers, in contrast, clearly established the level of skills as "low mastery."

For the Livestock Health area, four out of five groups of respondents (graduates, parents, farmers, and teachers) considered the level of skills as "high mastery." In the opinion of those who actually are receiving the instruction,

TABLE XXX

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TC THE EXTENT OF STUDENT MASTERY SKILLS OF SELECTED ITEMS

School: San Luis

Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
			Mean		
Nutrition	2.036	2.972	3.182	3.125	2.500
Health	2.911	3.410	3.030	3.396	3.167
Management	1.798	2.882	2.955	3.040	2.617
Reproduction	2.900	3.409	3.236	3.325	3.080
Grand Mean	2.411	3.168	3.100	3.221	2.840

current students, skills must be characterized as "low mastery."

For the Livestock Management area, perceptions of current students, graduates, parents, and teachers considered the skills acquired as "low mastery." At this point it should be noted that the lowest mean score pertains to current students. The remaining group, farmers, focused their opinions on the "high mastery" category.

For the Livestock Reproduction area, examination of the data evidenced total agreement among the groups made up of graduates, parents, farmers, and teachers, estimating that skills acquired by animal science students in this area must be denoted as "high mastery." In the meantime, current students, consistent with their previous appreciations, indicated skills as "low mastery."

Mayorica School

Analysis of data presented in Table XXXI, regarding the Livestock Nutrition area, showed a consensus in the responses all five groups (current students, students, parents, farmers, and teachers). Thus, they connoted skills as "low mastery."

For the area of Livestock Health, by examination of the groups' mean scores, agreement was observed among the perceptions of current students, parents, farmers, and teachers, indicating the level of skills as "high mastery." The

TABLE XXXI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF STUDENTS MASTERY SKILLS OF SELECTED ITEMS

School: Mayorica					
Areas of Animal Science Studies	Current Students N = 28	Grad-uates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 6
			Mean		
Nutrition	2.262	2.153	2.788	2.250	2.444
Health	3.310	2.653	3.606	3.052	3.528
Management	1.851	1.757	2.470	1.865	2.361
Reproduction	3.221	2.558	3.491	2.813	2.833
Grand Mean	2.661	2.280	3.088	2.494	2.791

remaining group, graduates, localized their perceptions within the "low mastery" category.

For the Livestock Management area, all groups (current students, graduates, parents, farmers, and teachers) gave responses falling within the category of "low mastery" skills.

For the area of Livestock Reproduction, responses given by current students and parents fell within the category of "high mastery." In contrast, graduates, farmers, and teachers responded in such a manner that their perceptions related to skills were considered "low mastery."

Aregue School

Data shown in Table XXXII, regarding the Livestock Nutrition area, presented all five groups with similar opinions, perceiving the level of skills as "low mastery."

For the area of Livestock Health, four out of five groups (current students, parents, farmers, and teachers) perceived the level of skills as "low mastery." The remaining group, graduates, gave responses characterizing skills as "high mastery."

For the Livestock Management area, data shown in Table XXXII reflects total agreement of responses of all five groups (current students, graduates, parents, farmers, and teachers). Thus, perceptions about skills fall within the "low mastery" category.

For the Livestock Reproduction area, perceptions of five groups characterized skills as "low mastery."

TABLE XXXII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF STUDENTS MASTERY SKILLS OF SELECTED ITEMS

School: Aregue					
Areas of Animal Science Studies	Current Students N = 19	Grad-uates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	1.544	2.429	2.733	2.852	2.152
Health	2.105	3.071	2.850	2.685	2.349
Management	1.298	1.905	2.350	2.685	1.818
Reproduction	1.990	2.857	2.960	2.844	2.582
Grand Mean	1.734	2.565	2.723	2.766	2.225

Agua Blanca School

Examination of data shown in Table XXXIII, regarding Livestock Nutrition area, revealed all five groups of respondents (current students, graduates, farmers, parents, and teachers) with similar perceptions, categorizing skills as "low mastery."

For the Livestock Health area, three out of five groups (graduates, parents, and farmers) perceived skills falling within the "low mastery" category. Responses of the groups made up of current students and teachers agreed, indicating "high mastery" skills. For Livestock Management area, all five groups indicated "low mastery."

For the area of Livestock Reproduction, two out of five groups (current students and teachers) coincided in their opinions, denoting skills as "high mastery." On the other hand, graduates, parents, and farmers indicated skills as "low mastery."

Assessment of Extent of Student Attitude Development as Performing Selected Items in the Classroom

San Luis School

Data presented in Table XXIV, regarding the Livestock Nutrition area, showed all five groups' (current students, graduates, parents, farmers, and teachers) responses falling within the category of "positive" attitude development.

TABLE XXXIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF STUDENTS MASTERY SKILLS OF SELECTED ITEMS

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 35	Grad-uates N = 13	Parents N = 10	Farmers N = 6	Teachers N = 4
			Mean		
Nutrition	2.181	2.359	2.900	2.056	2.917
Health	3.276	2.846	2.817	2.194	2.958
Management	1.914	1.821	2.267	2.139	2.875
Reproduction	3.023	2.939	2.700	2.500	3.450
Grand Mean	2.598	2.491	2.671	2.222	3.050

TABLE XXIV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN THE CLASSROOM

School: San Luis

Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 10	Farmers N = 15	Teachers N = 10
			Mean		
Nutrition	3.702	4.458	4.767	3.978	4.033
Health	4.137	4.625	4.800	4.066	4.617
Management	3.250	4.153	4.733	3.767	4.100
Reproduction	4.121	4.617	4.700	4.053	4.620
Grand Mean	3.802	4.463	4.750	3.965	4.342

For the Livestock Health area, all five groups of respondents (current students, graduates, parents, farmers, and teachers) perceived attitude development as "positive."

For the Livestock Management area, coincidental perceptions of all five groups of respondents (current students, graduates, parents, farmers, and teachers) characterized attitude development as "positive."

For the Livestock Reproduction area, clear agreement was observed among the five groups when mean scores were examined. Thus, attitude development was denoted as "positive."

Mayorica School

Data shown in Table XXXV, regarding Livestock Nutrition area, revealed total agreement considering the five groups of respondents (current students, graduates, parents, farmers, and teachers). Therefore, attitude development was characterized as "positive."

For the Livestock Health area, all five groups (current students, graduates, parents, farmers, and teachers) coincided in their perceptions, considering "positive" the attitude development.

For the Livestock Management area, by examination of groups mean scores, all five groups (current students, graduates, parents, farmers, and teachers) gave responses indicating attitude development as "positive."

TABLE XXXV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN THE CLASSROOM

School: Mayorica					
Areas of Animal Science Studies	Current Students N = 25	Grad-uates N = 12	Parents N = 30	Farmers N = 6	Teachers N = 10
			Mean		
Nutrition	4.187	4.111	4.067	2.944	3.900
Health	4.707	4.528	4.533	3.306	4.617
Management	3.8000	3.861	3.833	3.167	3.250
Reproduction	4.648	4.367	4.487	3.267	3.980
Grand Mean	4.335	4.216	4.230	3.170	3.936

For the Livestock Reproduction area, all five groups (current students, graduates, parents, farmers, and teachers) converged in their perceptions, indicating "positive" attitude development.

Aregue School

Data presented in Table XXXVI, regarding Livestock Nutrition area, showed coincidental perceptions among the five groups (current students, graduates, parents, farmers, and teachers). Thus, attitude development was indicated as "positive."

For the area of Livestock Health, all five groups (current students, graduates, parents, farmers, and teachers) presented total agreement, denoting attitude development as "positive."

For the Livestock Management area, by examination of data, coincidental perceptions of four out of five groups of respondents (graduates, parents, farmers, and teachers) resulted in "positive" attitude development. The remaining group, current students, indicated "negative" attitude development while performing the selected items within the area.

For the Livestock Reproduction area, responses of all five groups (current students, graduates, parents, farmers, and teachers) were similar. Therefore, their perceptions distinguished attitude development as "positive."

TABLE XXXVI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN THE CLASSROOM

School: Aregue

Areas of Animal Science Studies	Current Students N = 19	Graduates N = 14	Parents N = 6	Farmers N = 7	Teachers N = 11
			Mean		
Nutrition	3.702	4.548	4.778	3.810	4.485
Health	4.088	4.679	4.528	3.810	4.515
Management	2.904	3.881	4.167	3.786	4.000
Reproduction	3.716	4.386	4.533	3.857	4.527
Grand Mean	3.602	4.378	4.501	3.815	4.381

Agua Blanca School

Data shown in Table XXXVII, regarding Livestock Nutrition area, presented all five groups of respondents (current students, graduates, parents, farmers, and teachers) as considering attitude development "positive."

For the Livestock Health area, perceptions of the five groups (current students, graduates, parents, farmers, and teachers) indicated attitude development as "positive."

For the Livestock Management area, all five groups of respondents (current students, graduates, parents, farmers, and teachers) perceived student attitude development as "positive."

For the area of Livestock Reproduction, total agreement was showed by the five groups of respondents (current students, graduates, parents, farmers, and teachers). Thus, attitude development was termed "positive."

Assessment of the Extent of Student
Attitude Development as Performing
Selected Items in Practice

San Luis School

Data shown in Table XXXVIII regarding Livestock Nutrition area presented the responses of all five groups (current students, graduates, parents, farmers, and teachers) falling within the "positive" attitude development category.

TABLE XXXVII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN THE CLASSROOM

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 32	Grad-uates N = 13	Parents N = 5	Farmers N = 2	Teachers N = 4
			Mean		
Nutrition	3.406	3.4180	4.733	5.000	4.000
Health	4.255	4.885	4.800	5.000	4.375
Management	3.115	4.051	4.533	5.000	4.167
Reproduction	4.050	4.600	4.760	5.000	4.250
Grand Mean	3.707	4.429	4.707	5.000	4.198

TABLE XXXVIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN PRACTICE

School: San Luis

Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 10	Farmers N = 15	Teachers N = 9
			Mean		
Nutrition	3.214	4.458	4.833	4.400	4.333
Health	3.9299	4.542	4.900	4.533	4.556
Management	2.810	4.111	4.867	4.422	4.074
Reproduction	3.714	4.600	4.860	4.400	4.444
Grand Mean	3.416	4.427	4.865	4.438	4.351

For the area of Livestock Health, respondents of groups made up of current students, graduates, parents, farmers, and teachers indicated student attitude development as "positive."

For the Livestock Management area, four out of five groups (graduates, parents, farmers, and teachers) considered student attitude development in practice as "positive." Different perceptions manifested, with current students denoting student attitude development as "negative."

For the Livestock Reproduction area, perceptions of the five groups of respondents (current students, graduates, parents, farmers, and teachers) indicated the student attitude development in practice as "positive."

Mayorica School

Data shown in Table XXXIX, regarding Livestock Nutrition area, presented all five groups of respondents (current students, graduates, parents, farmers, and teachers) in total agreement. Therefore, student attitude development in practice was considered "positive."

For the area of Livestock Health, responses given by all five groups (current students, graduates, parents, farmers, and teachers) indicated a visible consensus. Thus, students attitude development was distinguished as "positive."

For the area of Livestock Management, perceptions manifested by the five groups of respondents (current students, graduates, parents, farmers, and teachers) considered "positive" the student attitude development.

TABLE XXXIX

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN PRACTICE

School: Mayorica

Areas of Animal Science Studies	Current Students N = 25	Grad-uates N = 12	Parents N = 30	Farmers N = 6	Teachers N = 10
			Mean		
Nutrition	3.947	4.028	3.844	3.889	3.767
Health	4.680	4.417	4.506	4.278	4.718
Management	3.453	3.597	3.633	4.000	3.317
Reproduction	4.600	4.167	4.493	4.233	4.200
Grand Mean	4.170	4.052	4.199	4.100	4.000

For the area of Livestock Reproduction, the same pattern was observed by examining mean scores of responses of all five groups comprised of current students, graduates, parents, farmers, and teachers. In their opinions, student attitude development was considered "positive."

Aregue School

Data shown in Table XL presented the responses of five groups (current students, graduates, parents, farmers, and teachers) as "positive" attitude development regarding the four areas of Nutrition, Health, Management, and Reproduction in Livestock, except one group, current students, whose perceptions of attitude development for the Livestock Reproduction area was indicated as "negative."

Agua Blanca School

Data presented in Table XLI indicated a consensus of the five groups made up of current students, graduates, parents, farmers, and teachers, considering the four areas of Nutrition, Health, Management, and Reproduction. Therefore, their perceptions were characterized as "positive" attitude development. One exception was encountered in current students, who indicated "negative" attitude development for the Livestock Management area.

TABLE XL

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN PRACTICE

School: Aregue

Areas of Animal Science Studies	Current Students N = 19	Graduates N = 14	Parents N = 6	Farmers N = 7	Teachers N = 11
			Mean		
Nutrition	3.4034	4.262	5.000	4.429	4.833
Health	4.167	4.643	4.778	4.429	4.652
Management	2.868	3.774	4.500	4.381	4.106
Reproduction	3.884	4.543	5.000	4.371	4.655
Grand Mean	3.580	4.305	4.819	4.402	4.561

TABLE XLI

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN PRACTICE

School: Agua Blanca					
Areas of Animal Science Studies	Current Students N = 33	Graduates N = 13	Parents N = 5	Farmers N = 2	Teachers N = 4
			Mean		
Nutrition	3.081	3.846	4.733	5.000	3.917
Health	4.374	4.667	4.867	5.000	4.750
Management	2.919	3.372	4.400	5.000	4.083
Reproduction	4.127	4.369	4.920	5.000	4.550
Grand Mean	3.625	4.063	4.730	5.000	4.325

Assessment of Extent of Graduates' Performance on the Job

San Luis School

Data shown in Table XLII, regarding Livestock Nutrition area, indicated that two of five groups, current students and teachers, perceived on-the-job performance as "low level of competence." The remaining three groups (graduates, parents, and teachers) responded in such as manner that their perceptions were characterized as "high level of competence."

For the other three areas, Health, Management, and Reproduction of Livestock, perceptions of the respondents were in agreement, being "high level of competence," except for the Livestock Management area, where current student responses indicated "low level of competence."

Mayorica School

Data shown in Table XLIII, regarding Livestock Nutrition area, indicated all five groups (current students, parents, farmers, and teachers) giving responses falling within the limits of "high level of competence."

For the Livestock Health area, data presented a clear consensus among the perceptions of five groups (current students, graduates, parents, farmers, and teacher). Thus, the competence level was distinguished as "high."

For the area of Livestock Management, examination of the mean scores showed agreement of all five groups; therefore,

TABLE XLII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH SAN LUIS SCHOOL AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

School: San Luis					
Areas of Animal Science Studies	Current Students N = 28	Graduates N = 24	Parents N = 11	Farmers N = 16	Teachers N = 10
			Mean		
Nutrition	2.619	3.250	3.485	3.583	2.833
Health	3.429	3.646	3.318	3.885	3.817
Management	2.500	3.153	3.227	3.552	3.167
Reproduction	3.286	3.533	3.364	3.838	3.580
Grand Mean	2.958	3.396	3.349	3.715	3.349

TABLE XLIII

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH MAYORICA SCHOOL AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

Areas of Animal Science Studies	Current Students N = 25	Graduates N = 12	Parents N = 30	Farmers N = 8	Teachers N = 10
			Mean		
Nutrition	2.280	2.528	2.922	3.250	2.267
Health	3.507	3.472	3.556	3.354	3.567
Management	2.180	2.028	2.594	2.667	2.283
Reproduction	3.232	3.000	3.553	3.475	2.860
Grand Mean	2.800	2.757	3.156	3.187	2.744

level of competence was denoted as "low."

For the Livestock Reproduction area, four out of five groups (current students, graduates, parents, and farmers) gave responses falling within the category of "high level of competence." Teachers had contrary perceptions, thus, their opinions must be indicated as "low."

Aregue School

Data presented in Table XLIV, regarding Livestock Nutrition area, revealed that two out of five groups, parents and farmers, gave responses which fell within the category of "high" for level of competence. The residual groups (current students, graduates, and teachers) designated the level of competence as "low."

For the area of Livestock Health, graduates, parents, and farmers responded within the "high level of competence" category. The remaining two groups, current students and teachers, perceived the level of competence as "low."

For the Livestock Management area, four out of five groups agreed in their perceptions, thus, they characterized graduates' level of competence as "low." The remaining group, farmers, responded in such a manner that their perception must be distinguished as "high."

For the Livestock Reproduction area, three groups comprised of parents, farmers, and teachers provided responses falling within the "high level of competency" category, while

TABLE XLIV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AREGUE SCHOOL AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

School: Aregue

Areas of Animal Science Studies	Current Students N = 19	Graduates N = 14	Parents N = 10	Farmers N = 9	Teachers N = 11
			Mean		
Nutrition	2.193	2.286	3.400	3.444	2.879
Health	2.956	3.202	3.400	3.315	2.985
Management	1.982	2.071	2.733	3.222	2.546
Reproduction	2.758	2.829	3.560	3.356	3.236
Grand Mean	2.472	2.597	3.273	3.334	2.912

current students and graduates indicated "low level of competence."

Agua Blanca School

Data presented in Table XLV, regarding the Livestock Nutrition area, showed agreement of current students, graduates, and teachers, indicating the level of competence as being in the "low" category. Parent and farmer responses denoted as "high" the competence level of graduates.

For the area of Livestock Health, a total concordance was shown, and perceptions of all five groups of respondents nominated the level of competence in graduates of animal science as "high."

For the Livestock Management area, perceptions of current students, graduates, and parents indicated a "low level of competence" of students who pursued the animal science curriculum. Contrary to those opinions were the perceptions of farmers and teachers, who considered as "high" the level of competence of the students.

For the area of Livestock Reproduction, perceptions of all five groups (current students, graduates, parents, farmers, and teachers) coincided; therefore, their responses were distinguished as "high" in relation to the level of competence.

TABLE XLV

PERCEPTIONS OF FIVE GROUPS ASSOCIATED WITH AGUA BLANCA SCHOOL AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

School: Agua Blanca

Areas of Animal Science Studies	Current Students N = 30	Graduates N = 13	Parents N = 6	Farmers N = 5	Teachers N = 4
			Mean		
Nutrition	2.411	2.462	3.222	3.200	2.917
Health	3.461	3.026	3.444	3.267	4.083
Management	2.250	2.115	2.667	3.200	3.417
Reproduction	3.420	3.000	3.333	3.240	4.150
Grand Mean	2.886	2.650	3.167	3.227	3.641

Extent of Involvement of Five Groups of Teachers in Curriculum Planning and Development

Data shown in Table XLVI, regarding Livestock Nutrition area, presented responses of vocational agricultural teachers, administrators, and regional supervisors, which fell within the absolute limits of the "seldom" category. Meanwhile, national supervisors characterized their involvement as "sometimes." The remaining group, university professors, revealed that their involvement must be denoted as "never."

For the area of Livestock Health, respondents comprised of voc-agr-teachers, administrators, and national supervisors indicated that their perceptions must be considered as "sometimes." The regional supervisor considered himself "seldom" involved. The responses of the residual group, university professors, fell within the absolute limits of the "never" category.

For the Livestock Management area, three out of five groups (voc-agri-teachers, administrators, and regional supervisor) gave responses falling within the limits of the "seldom" category. Meanwhile, national supervisors indicated their involvement as "sometimes." The remaining group, university professors, perceived themselves as "never" being involved.

For the Livestock Reproduction area, perceptions of three out of five groups (voc-agri-teachers, administrators,

TABLE XLVI

PERCEPTIONS OF FIVE GROUPS OF TEACHERS AS TO THE EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 5	Natl. Superv. N = 2	Regional Superv. N = 1
			Mean		
Nutrition	2.083	2.333	1.400	2.500	2.000
Health	2.548	2.691	1.333	2.500	2.167
Management	2.149	2.191	1.300	2.500	2.000
Reproduction	2.436	2.343	1.400	2.500	2.200
Grand Mean	2.303	2.389	1.358	2.500	2.091

Scale Absolute Limits: Never 0.5-1.49; Seldom 1.5-2.49; Sometimes 2.5-3.49; Frequently 3.5-4.49; Always 4.5-5.49.

and regional supervisor) denoted involvement as "seldom." National superviors are the only respondents who feel they "sometimes" are involved. The group left over, university professors, perceived as "never" their involvement.

Extent of Involvement of Five Groups of Teachers in Curriculum Implementation

Data shown in Table XLVII, regarding the Livestock Nutrition area, indicated that three out of five groups (vocational agricultural teachers, university professors, and regional supervisor) gave responses falling within the limits of the "seldom" category. Administrators' responses indicated their involvement as "sometimes." The remaining group, national supervisors, responded in such a manner that their perceptions were clearly characterized as "never."

For the area of Livestock Health, voc-teachers and administrators gave responses falling within the limits of the "sometimes" category. Meanwhile, university professors and the regional supervisor indicated that their perceptions must be characterized as "seldom." The residual group, national supervisors, considered as "never" being involved.

For the Management and Reproduction areas in Livestock, three out of five groups (voc-agri-teachers, administrators, and university professors) manifested "seldom" involvement. The remaining two groups, national and regional supervisors, expressed their perceptions in terms of "never" being involved.

TABLE XLVII

PERCEPTIONS OF FIVE GROUPS OF TEACHERS AS TO THE EXTENT OF INVOLVEMENT IN CURRICULUM IMPLEMENTATION

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 5	Natl. Superv. N = 2	Regional Superv. N = 1
			Mean		
Nutrition	2.107	2.714	1.800	1.000	2.333
Health	2.732	3.119	1.833	1.000	1.833
Management	2.107	2.405	1.733	1.000	1.333
Reproduction	2.586	2.743	1.800	1.000	1.000
Grand Mean	2.383	2.745	1.792	1.000	1.625

Scale Absolute Limits: Never 0.5-1.49; Seldom 1.5-2.49; Sometimes 2.5-3.49; Frequently 3.5-4.49; Always 4.5-5.49.

Assessment of Importance of Extent of
Involvement of Teachers in Curriculum
Planning and Implementation

Examination of the data presented in Table XLVIII, regarding Nutrition, Health, Management, and Reproduction areas revealed that four groups out of five (voc-agri-teachers, administrators, university professors, and regional supervisor) considered their importance of involvement as "much." The remaining group, national supervisors, gave responses which were distinguished as "little."

Assessment of Four Groups of Teachers
as to the Extent of Student Mastery
Knowledge Related to Selected Items
of Animal Science Studies

Data presented in Table XLIX, regarding Livestock Nutrition area show three out of four groups of respondents (voc-agri-teachers, administrators, and national supervisors) gave responses considered as "low." The remaining group, university professors, considered as "high mastery" the student knowledge.

For the area of Livestock Health, voc-agri-teachers, administrators, and national supervisors indicated as "high mastery" the student knowledge.

For the area of Livestock Management, responses of three of four groups (voc-agri-teachers, administrators, and university professors converged. Therefore, knowledge was

TABLE XLVIII

PERCEPTIONS OF FIVE GROUPS OF TEACHERS AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM DEVELOPMENT AND IMPLEMENTATION

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 5	Natl. Superv. N = 2	Regional Superv. N = 1
			Mean		
Nutrition	3.238	3.667	3.733	2.833	3.000
Health	3.786	4.000	3.833	2.583	3.000
Management	3.250	3.167	3.900	2.750	3.000
Reproduction	3.429	3.400	4.040	2.800	3.000
Grand Mean	3.426	3.558	3.877	2.742	3.000

Scale Absolute Limits: None 0.5-1.49; Little 1.5-2.49; Somewhat 2.5-3.49; Much 3.5-4.49; Excessive 4.5-5.49.

TABLE XLIX

PERCEPTIONS BY RESPONDENTS OF FOUR GROUPS AS TO THE EXTENT OF THE STUDENT MASTERY KNOWLEDGES OF SELECTED ITEMS IN ANIMAL SCIENCE STUDIES

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 4	Natl. Superv. N = 2	Regional Superv. N = 0
			Mean		
Nutrition	2.488	2.714	3.417	2.833	-
Health	3.083	3.191	2.750	3.250	-
Management	2.387	2.429	2.750	3.000	-
Reproduction	2.929	3.086	3.650	3.000	-
Grand Mean	2.722	2.855	3.142	3.021	-

distinguished as "low mastery." The residual group, national supervisors, gave responses indicating knowledge as "high mastery."

For the Livestock Reproduction area, responses given by administrators, university professors, and national supervisors indicated student knowledge as "high mastery." Meanwhile, voc-agric-teachers localized their perceptions within the limits of "high mastery" category.

Assessment of Four Groups of Teachers as to the Extent of Student Mastery Skills of Selected Items

Data presented in Table L, regarding the Livestock Nutrition area, showed two groups, voc-agri-teachers and administrators indicating "low mastery" skills, while responses of university professors and national supervisors distinguished skills as "high mastery."

For the Livestock Health area, three out of four groups (voc-agri-teachers, university professors, and national supervisors distinguished skills as "high mastery."

For the Livestock Health area, three out of four groups (voc-agri-teachers, university professors, and national supervisors) gave responses indicating skills as "high mastery." The remaining group, administrators, characterized skills as low mastery."

For the Livestock Management area, perceptions of groups comprised of voc-agri-teachers, administrators, and university

TABLE L

PERCEPTIONS OF FOUR GROUPS AS TO THE EXTENT OF THE STUDENT MASTERY SKILLS OF SELECTED ITEMS IN ANIMAL SCIENCE STUDIES

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 5	Natl. Superv. N = 2	Regional Superv. -
			Mean		
Nutrition	2.262	2.762	3.667	3.000	-
Health	3.077	2.952	3.100	3.250	-
Management	2.220	2.405	2.800	3.083	-
Reproduction	2.807	3.086	3.960	3.100	-
Grand Mean	2.592	2.801	3.382	3.108	-

professors categorized skills as "low mastery." Meanwhile, the remaining group, national supervisors, gave responses falling within the limits of "high mastery."

For the Livestock Reproduction area, responses given by three out of four groups (administrators, university professors, and national supervisors) fell within the "high mastery" category. The residual group, voc-agri-teachers, must be denoted as "low mastery" in their responses.

Assessment of Four Groups of Teachers as to the Extent of Attitude Development as Performing Selected Items in the Classroom

Data shown in Table LI, regarding Nutrition, Health, Management, and Reproduction areas, presented a clear consensus among the four groups of respondents comprised of vocational agricultural teachers, administrators, professors, and national supervisors. Therefore, their perceptions were characterized as "positive" attitude development.

Assessment of Four Groups of Teachers as to the Extent of Student Attitude Development as Performing Selected Items in Practice

Data presented in Table LII, regarding the Nutrition, Health, Management, and Reproduction areas, show an agreement among the perceptions of the four groups made up of

TABLE LI

COMBINED PERCEPTIONS OF FOUR GROUPS OF TEACHERS AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT OF SELECTED ITEMS IN THE CLASSROOM

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 4	Natl. Superv. N = 2	Regional Superv. N = 0
			Mean		
Nutrition	3.952	4.714	4.333	3.833	-
Health	4.571	4.524	4.208	3.833	-
Management	3.804	3.905	3.833	3.833	-
Reproduction	4.364	4.429	4.550	3.600	-
Grand Mean	4.173	4.393	4.231	3.775	-

TABLE LII

PERCEPTIONS OF FOUR GROUPS OF TEACHERS AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT OF SELECTED ITEMS IN PRACTICE

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 4	Natl. Superv. N = 2	Regional Superv. N = 0
			Mean		
Nutrition	3.905	4.429	4.500	3.833	-
Health	4.679	4.476	4.542	4.083	-
Management	3.804	3.595	3.958	3.750	-
Reproduction	4.436	4.343	4.850	3.600	-
Grand Mean	4.206	4.211	4.463	3.817	-

voc-agri-teachers, administrators, university professors, and national supervisors. Thus, their responses as to the attitude development in practice were indicated as "positive."

Assessment of Five Groups of Teachers as to the Extent of Graduates' Performance on the Job

Data shown in Table LIII, regarding the Livestock Nutrition area, presented perceptions of three out of five groups (administrators, university professors, and national supervisors) indicating a "high level of competence" of the graduates on the job. Meanwhile, responses of the remaining two groups, voc-agri-teachers and regional supervisor) indicated that competence must be distinguished as "low level."

For the Livestock Health area, four groups (voc-agri-teachers, administrators, university professors, and national supervisors) indicated with their responses that graduates' competence level on the job must be denoted as "high." The remaining group, regional supervisor, characterized as "low" the level of competence.

For the Livestock Management area, four out of five groups, voc-agri-teachers, administrators, university professors, and regional supervisor, gave responses indicating the level of competence as low. The remaining group, national supervisors, considered performance in the "high" level of competence.

TABLE LIII

PERCEPTIONS OF FIVE GROUPS OF TEACHERS AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

Areas of Animal Science Studies	Vocational Teachers N = 28	Admn. Pers. N = 7	Univ. Prof. N = 4	Natl. Superv. N = 2	Regional Superv. N = 1
			Mean		
Nutrition	2.619	3.000	3.500	3.500	2.000
Health	3.613	3.119	3.625	3.667	2.667
Management	2.827	2.429	2.958	3.083	2.667
Reproduction	3.357	3.229	3.950	3.500	2.000
Grand Mean	3.104	2.944	3.508	3.438	2.333

For the area of Livestock Reproduction, all five groups, voc-agri-teacher, administrator, university professor, national supervisor perceptions showed that performance on the job for this area must be characterized as "high level of competence."

Extent of Involvement of Five Groups in Curriculum Planning and Development

Data shown in Table LIV, regarding Livestock Nutrition, Health, Management, and Reproduction areas indicated that perceptions of three out of five groups (current students, graduates, and teachers) considered their involvement as "seldom." Parents and farmers gave responses that manifested their involvement must be distinguished as "never."

Extent of Involvement of Five Groups in Curriculum Implementation

Data presented in Table LV, regarding Livestock Nutrition area, showed three groups out of five (current students, graduates, and teachers) responded in such a manner that their perceptions of involvement must be indicated as "seldom." The remaining two groups, parents and farmers, considered their involvement as "never."

For the area of Livestock Health, responses of current students and teachers indicated that their involvement must be denoted as "seldom." Parents and farmers perceived themselves as "never" being involved. The exception was

TABLE LIV

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND DEVELOPMENT

Areas of Animal Science Studies	Current Students N = 107	Graduates N = 63	Parents N = 61	Farmers N = 39	Teachers N = 43
			Mean		
Nutrition	1.732	1.815	1.022	1.231	2.062
Health	2.321	2.156	1.104	1.303	2.419
Management	1.676	1.667	1.006	1.231	2.070
Reproduction	2.323	1.965	1.013	1.246	2.298
Grand Mean	2.013	1.901	1.036	1.253	2.212

Scale Absolute Limits: Never 0.5-1.49; Seldom 1.5-2.49; Sometimes 2.5-3.49; Frequently 3.5-4.49; Always 4.5-5.49.

TABLE LV

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF INVOLVEMENT IN CURRICULUM IMPLEMENTATION

Areas of Animal Science Studies	Current Students N = 107	Graduates N = 63	Parents N = 61	Farmers N = 39	Teachers N = 43
			Mean		
Nutrition	1.788	2.423	1.016	1.231	2.124
Health	2.569	3.071	1.077	1.479	2.589
Management	1.555	2.103	1.022	1.261	2.043
Reproduction	2.492	2.851	1.030	1.344	2.409
Grand Mean	2.101	2.612	1.036	1.328	2.291

Scale Absolute Limits: Never 0.5-1.49; Seldom 1.5-2.49; Sometimes 2.5-3.49; Frequently 3.5-4.49; Always 4.5-5.49.

manifested by graduates, whose responses fell within the absolute limits of the "sometimes" category.

An examination of the mean scores of respondents regarding Livestock Management area, shows three out of five groups (current students, graduates, and teachers) considered their involvement as "seldom." Parents and farmers continued with the same pattern of the previous area, indicating that their involvement must be characterized as "never."

For the Livestock Reproduction area, current students and teachers gave responses indicating "seldom" involvement. At the same time, parents and farmers manifested "never" being involved. The remaining group, graduates, indicated that their involvement must be considered as "somewhat."

Assessment of Importance of Extent of
Involvement of Five Groups in
Curriculum Planning and
Implementation

Data shown in Table LVI, regarding the Livestock Nutrition area, shows responses given by groups comprised of current students and teachers indicated that their importance of extent of involvement must be considered as "somewhat." Meanwhile, graduates, parents, and farmers indicated that their perceptions of importance of extent of involvement must be characterized as "much."

For the Livestock Health area, perceptions of all five groups (current students, graduates, parents, farmers, and

TABLE LVI

PERCEPTIONS OF FIVE GROUPS AS TO THE IMPORTANCE OF EXTENT OF INVOLVEMENT IN CURRICULUM PLANNING AND IMPLEMENTATION

Areas of Animal Science Studies	Current Students N = 107	Graduates N = 63	Parents N = 61	Farmers N = 39	Teachers N = 43
			Mean		
Nutrition	3.190	3.571	3.710	3.777	3.341
Health	3.787	3.949	3.860	4.068	3.751
Management	3.154	3.608	3.683	3.897	3.283
Reproduction	3.503	3.803	3.744	3.959	3.456
Grand Mean	3.408	3.733	3.749	3.926	3.458

Scale Absolute Limits: None 0.5-1.49; Little 1.5-2.49; Somewhat 2.5-3.49; Much 3.5-4.49; Excessive 4.5-5.49.

teacher were in accord, indicating that their importance of extent of involvement must be distinguished as "much."

For the area of Livestock Management, three out of five groups (graduates, parents, and farmers) considered as "much" their importance of extent of involvement. Meanwhile, current students and teachers perceived their importance of extent of involvement as "somewhat."

For the area of Livestock Reproduction, all five groups indicated as "much" their importance of involvement.

Assessment of Five Groups as to the
Extent of Students' Mastery
Knowledge of Selected Items

Data shown in Table LVII, regarding Livestock Nutrition area, indicated that four out of five groups (current students, graduates, parents, and teachers) gave responses considering knowledge as "low mastery." The remaining group, farmers, responded in such a manner that student knowledge must be characterized as "high mastery."

For the Livestock Health area, four out of five groups, graduates, parents, farmers, and teachers, indicated a significant degree of consensus with their perceptions. Therefore, their mean scores fell within the category of "high mastery" knowledge. The remaining group, current students, manifested that knowledge must be denoted as "low mastery."

For the area of Livestock Management, all five groups (current students, graduates, parents, and farmers) were in

TABLE LVII

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF STUDENT MASTERY KNOWLEDGE OF SELECTED ITEMS

Areas of Animal Science Studies	Current Students N = 107	Graduates N = 63	Parents N = 61	Farmers N = 39	Teachers N = 41
			Mean		
Nutrition	2.158	2.783	2.978	3.034	2.634
Health	2.895	3.216	3.183	3.133	3.077
Management	1.755	3.359	2.543	2.897	2.459
Reproduction	2.938	3.146	3.209	3.062	3.029
Grand Mean	2.437	2.876	2.978	3.031	2.800

clear agreement. Thus, their perceptions must be distinguished as "low mastery" knowledge.

For the Livestock Reproduction area, three out of five groups reported considerable agreement when their mean scores fell above the mean score of the scale, indicating knowledge as "high mastery." The residual group, current students, gave contrary responses, considering knowledge as "low mastery."

Assessment of Five Groups as to the Extent of Student Mastery Skills of Selected Items

Data presented in Table LVIII, regarding the Livestock Nutrition area, showed significant agreement among the five groups comprised of current students, graduates, parents, farmers, and teachers. Therefore, their responses were indicated as "low mastery" skills.

For the area of Livestock Health, graduate and teacher responses were coincidental when they indicated that skills must be distinguished as "high mastery." Different opinions were expressed by current students, parents, and farmers, who denominated skills as "low mastery."

For the Livestock Management area, unanimous agreement was showed in the responses of five groups (current students, graduates, parents, farmers, and teachers). Therefore, skills were categorized as "low mastery."

For the Livestock Reproduction area, two groups out of five, graduates and teachers, responded in such a manner that

TABLE LVIII

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF STUDENT MASTERY SKILLS OF SELECTED ITEMS

Areas of Animal Science Studies	Current Students N = 107	Graduates N = 63	Parents N = 61	Farmers N = 39	Teachers N = 10
			Mean		
Nutrition	2.040	2.592	2.661	2.769	2.547
Health	2.967	3.156	2.975	2.931	3.067
Management	1.747	2.235	2.286	2.645	2.361
Reproduction	2.848	2.768	2.723	2.823	2.745
Grand Mean	2.401	2.768	2.723	2.823	2.745

skills were denoted as "high mastery." Meanwhile, responses of students, parents, and farmers indicated that skills must be known as "low mastery."

Assessment of Five Groups as to the Extent of Student Attitude Development as Performing Selected Items in the Classroom (Theory)

Data presented in Table LIX, regarding the Livestock Nutrition, Health, Management, and Reproduction, showed a definite concurrence of perceptions of all five groups of respondents (current students, graduates, parents, farmers, and teachers. Therefore, students' attitude development in the classroom must be denominated as "positive."

Assessment as to the Extent of Student Attitude Development as Performing Selected Items in Practice

Data shown in Table LX, regarding Nutrition, Health, Management, and Reproduction, presented clear convergence of responses of all five groups made up of current students, graduates, parents, farmers, and teachers. Thus, their perceptions about attitude development in practice were indicated as "positive."

TABLE LIX

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN THE CLASSROOM

Areas of Animal Science Studies	Current Students N = 104	Graduates N = 59	Parents N = 51	Farmers N = 31	Teachers N = 38
			Mean		
Nutrition	3.817	4.452	4.339	3.838	4.254
Health	4.290	4.613	4.578	3.897	4.539
Management	3.331	4.107	4.081	3.720	3.956
Reproduction	4.051	4.467	4.505	3.883	4.405
Grand Mean	3.872	4.410	4.376	3.835	4.288

TABLE LX

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF STUDENT ATTITUDE DEVELOPMENT AS PERFORMING SELECTED ITEMS IN PRACTICE

Areas of Animal Science Studies	Current Students N = 105	Grad-uates N = 63	Parents N = 53	Farmers N = 30	Teachers N = 34
			Mean		
Nutrition	3.711	4.365	4.478	4.377	4.284
Health	4.114	4.428	4.544	4.483	4.465
Management	3.104	3.878	4.182	4.366	3.848
Reproduction	3.982	4.415	4.596	4.386	4.388
Grand Mean	3.728	4.272	4.450	4.403	4.246

Assessment as to the Extent of Graduates' Performance on the Job

Data shown in Table LXI, regarding the Livestock Nutrition area, presented responses of three out of five groups (current students, graduates, and teachers), indicating that the level of competence of graduates on the job must be designated as "low." The remaining two groups, parents and farmers, responded in such a manner that competence was denoted as "high."

For the Livestock Health area, a clear consensus was indicated by all five groups (current students, graduates, parents, farmers, and teachers), whose responses were compared with the mean score of the scale, denoting individual performance as "high" level of competence.

For the Livestock Management area, four out of five groups (current students, graduates, parents, and teachers) responded in such a manner that individual performance on the job must be distinguished as "low level of competence." The remaining group, farmers gave responses indicating individual performance on the job as "high level of competence."

Examination of data in Livestock Reproduction area and the mean scores of responses given by all five groups, comprised of current students, graduates, parents, farmers, and teachers, revealed a unanimous opinion toward individual performance on the job. Thus, their perceptions must be characterized as "high level of performance."

TABLE LXI

PERCEPTIONS OF FIVE GROUPS AS TO THE EXTENT OF GRADUATES' PERFORMANCE ON THE JOB

Areas of Animal Science Studies	Current Students N = 102	Graduates N = 63	Parents N = 57	Farmers N = 38	Teachers N = 35
			Mean		
Nutrition	2.395	2.735	3.146	3.492	2.695
Health	3.369	3.386	3.470	3.557	3.514
Management	2.251	2.484	2.748	3.241	2.747
Reproduction	3.213	3.165	3.494	3.568	3.331
Grand Mean	2.807	2.942	3.215	3.449	3.072

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present a summary review of the study problem, the design, and conduct of the study, and major findings. Also included are certain conclusions and recommendations resulting from analysis and interpretation of data.

Summary of Study Procedures

A major purpose of the study was to determine the nature and extent to which persons comprising nine identified groups are involved in development of an animal science curriculum at the secondary school level in the Central-Western Region of Venezuela. More specifically, determination of self-perceptions of involvement in the development and implementation of the animal science curriculum was a major focus of the study. A concomitant purpose was to analyze perceptions made by these same groups regarding adequacy of the present curriculum. To accomplish these purposes, the following objectives were formulated: 1) to determine the extent to which respondents comprising each of the nine selected groups perceived themselves as having been involved in the development and implementation of the present curriculum, 2) to

secure respondent perceptions as to the acquisition level of knowledge in selected animal science topics being obtained by students of vocational agricultural high schools, 3) to secure respondent perceptions as to the acquisition level of skills in selected animal science topics being obtained by students of vocational agricultural high schools, 4) to determine the extent to which respondents in selected groups feel that student attitudes are developed by classroom study of theory and by out-of-classroom practice of selected animal science topics, 5) to determine perceptions of respondents in each of the nine selected groups as to the current levels of performance exhibited by former students who studied the present animal science curriculum, 6) to determine perceptions of respondents in each of the nine selected groups regarding proposed changes, and 7) to develop and present a curriculum development model for consideration by the Ministry of Education.

The researcher developed a questionnaire to secure information related to the animal science curriculum. It was necessary for the researcher to travel to Venezuela in order to personally interview the respondents.

Using what was considered an appropriate statistical tool, data was collated, treated, and analyzed for differences among mean scores of the nine graphs.

Of the entire sample of 392 individuals, 313 responded with completed questionnaires, thus providing responses from 79.85 percent of the overall sample population.

In order to achieve the purpose and objectives of the study, the researcher collated response data made up of the perceptions of groups comprised of current students, graduates, parents, farmers, and teachers within each of the four selected agricultural high schools. Further, data from the remaining groups comprised of administrators, national supervisors, a regional supervisor, and faculty of agriculture were also obtained. Major treatment consisted of comparisons of mean scores of the groups which were also obtained. Major treatment consisted of comparisons of mean scores of the groups which were evaluated by application of previously established categories using a uniform system of absolute numerical limits for each category.

Voluntary Suggestions as to Procedure and Policy in Curriculum Development

Responses to a request for voluntary open comments or suggestions with regard to curriculum development resulted in the more-than 80 percent of respondents suggesting procedural and policy changes as follows: 1) Communication among different groups should be improved; 2) Group dynamic techniques, such as workshops, seminars, meetings, were pointed out as a most valuable procedure; 3) Incorporation of human resources throughout the whole process is a desirable practice; 4) A majority of individuals within each of the groups agreed that the school faculty and administration should go out to communicate their experiences throughout

the community; and 5) Members of each group urged instructors to use the community resources more frequently.

Summary of Findings

Data as presented in Table LXII, presents a summary of findings with regard to five of the seven objectives of the study:

1. Self perceptions of respondents in all nine groups were a relatively low level of involvement in planning, development, and implementation of the animal science curriculum in vocational agricultural high schools. Only 4 out of 28 teachers (14.29%) considered their involvement in curriculum development as "frequently." These teachers, as far as it was determined, have been teaching in Agua Blanca School for more years than other teachers in the other three schools. See Table XVII, Agua Blanca School.

2. Regardless of the low level of involvement so often perceived, the study reveals that all identified groups are willing and often eager to participate in curriculum development, both in planning and in the implementation processes.

3. The study further clearly reveals that groups comprised of current students and teachers are often more closely related to learning activities in the high schools, and they perceived the importance of their involvement as "somewhat." On the other hand, graduates, parents, and farmers, not so closely related to the daily school routine, characterized the potential value of their involvement as "much."

TABLE LXII

PERCEPTIONS OF FIVE GROUPS OF RESPONDENTS AS TO SELECTED ASPECTS AND PROCEDURES CLOSELY RELATED TO ANIMAL SCIENCE CURRICULUM DEVELOPMENT

Questions	Current Students	Graduates	Parents	Farmers	Teachers
PERCEPTIONS IN CURRICULUM PLANNING			Grand Mean		
How frequently have you been involved in deciding (planning) of each of the current subjects in animal science should be taught at the vocational agricultural high school?	N = 107 2.013	N = 63 1.900	N = 61 1.036	N = 39 1.252	N = 43 2.212
PERCEPTIONS IN CURRICULUM IMPLEMENTATION					
How frequently have you been involved in the implementation of each of the current subjects in animal science at the vocational agricultural high school?	N = 107 2.100	N = 63 2.612	N = 61 1.036	N = 39 1.328	N = 43 2.291

Scale:	Never	Seldom	Sometimes	Frequently	Always
	1	2	3	4	5

PERCEPTIONS ABOUT IMPORTANCE OF INVOLVEMENT					
How important do you consider is your participation in planning the current subjects in animal science at the vocational agricultural high school?	N = 107 3.408	N = 63 3.733	N = 61 3.749	N = 39 3.925	N = 43 3.457

Scale:	None	Little	Somewhat	Much	Excessive
	1	2	3	4	5

TABLE LXII (Continued)

Questions	Current Students	Graduates	Parents	Farmers	Teachers
PERCEPTIONS RELATED TO KNOWLEDGE			Grand Mean		
Express your judgment as to how well each of the following items are now an and/or previously have been acquired as knowledge by the students attending the vocational agricultural high school.	N = 107 2.437	N = 63 2.876	N = 61 2.978	N = 39 3.031	N = 42 2.800
PERCEPTIONS RELATED TO SKILLS					
Express your judgment as to how well each of the following items are now and/or previously have been acquired as skills.	N = 107 2.401	N = 63 2.768	N = 61 2.732	N = 39 2.823	N = 42 2.745
Scale: Low Mastery 1 2 3 4 5 High Mastery					
PERCEPTIONS RELATED TO AFFECTIVE DOMAIN					
How do these items now or how have they affected student interests, mood, and general attitude, while they perform the activities in theory (in the classroom)?	N = 104 3.872	N = 59 4.410	N = 51 4.376	N = 31 3.835	N = 38 4.288
How do these items now or how have they affected student interests, mood, and general attitude, while they perform activities in practice (out of the classroom, on the school farm, in home surroundings, or community)?	N = 105 3.728	N = 63 4.272	N = 53 4.450	N = 30 4.403	N = 34 4.246
Scale: Negative 1 2 3 4 5 Positive					

TABLE LXII (Continued)

Questions	Current Students	Graduates	Parents	Farmers	Teachers
PERCEPTIONS OF STUDENTS' PERFORMANCE					
How do you qualify the level of competence of the student on the job in each of the current subjects, following graduation from vocational agricultural high school?	N = 102 2.807	N = 63 2.942	N = 57 3.215	N = 38 3.449	N = 35 3.072

Scale: Low Level of Competence 1 2 3 4 5 High Level of Competence

4. Group perceptions as to the level of acquisition of knowledge by students in the four identified areas of Nutrition, Health, Management, and Reproduction Livestock was "low mastery." Only farmers as a group perceived such acquisition in all areas to be at the higher level of mastery, with a mean score slightly above mid-point of the scale. The remaining respondents considered acquisition of knowledge in all four animal science areas to be lower level.

5. All groups exhibited clear agreement characterizing skills as somewhat low mastery for each of the four identified areas of the animal science curriculum.

6. A very consistent consensus was found among groups regarding attitude development while performing both theoretical and practical activities mean scores for all groups were found to be relatively high in their judgments of this item.

7. Findings indicate that current students and graduates perceive that the competence level of individuals on the job is characterized at a somewhat low level. Contrastingly, groups comprised of parents and farmers judged the competence level as "relatively high." The teacher group tended to more closely coincide with the perceptions of current students and graduates.

8. Almost unanimous perceptions were found to exist among the groups regarding relative lack of communication, low level of relationships, and limited resource utilization. These three areas were pointed out as the most critical areas for improvement, and consequently should be given priority

in order to articulate the needs of the community with the curriculum in animal science for vocational high schools.

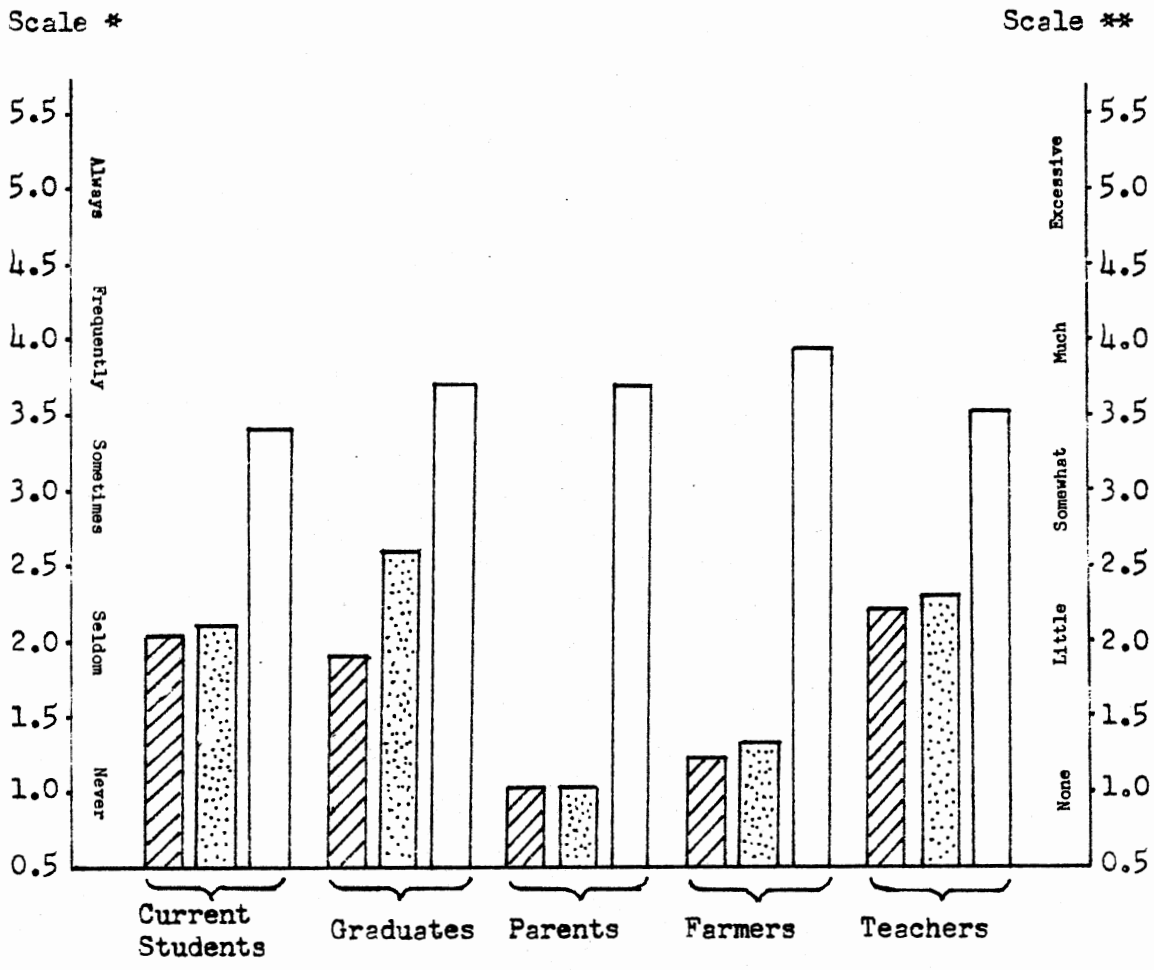
9. Workshops, seminars, and visits from school teachers to the community and community visits to the school were found to be the most appropriate group dynamic techniques to be used to build that desirable bridge between the school and the community.

10. Emphasis upon items of procedure and policy as expressed by voluntary suggestions and comments were very closely related to those expressed through completion of the structured schedule, reinforcing the need to give prior attention to improving communication, encouraging wider citizen participation and particularly use of community resources, both human and material.

Conclusions

Utilizing the analysis and interpretation of data, the author feels justified in making the following conclusions:

1. Figure 4 shows in a clear manner the agreement among the identified groups (current students, graduates, parents, farmers, and teachers) regarding the planning and implementation of an animal science curriculum. Therefore, it must be concluded that, regardless of the low level of involvement, the groups in general are willing to actively be involved in the whole process of learning. It seems to be appropriate to point out that graduates, parents, and farmers more clearly expressed their desires to be involved.



▨ = Involvement in Curriculum Planning
▩ = Involvement in Curriculum Implementation
□ = Importance of Involvement in Curriculum Planning and Implementation.

Scale * applies to question 1 and 2.
Scale ** applies to question 3.

Figure 4. Self-Perceptions of Five Selected Groups of Their Involvement in Curriculum Planning and Implementation

2. Attitude development of animal science students both in and outside the classroom, in spite of the low level of knowledge and skills with which the students were characterized by respondents, was established in a very clear way as being "positive." This means that in addition to the instructional spirit expressed by students and teachers, there are some other human, physical, and economic resources which, with a rational and more efficient utilization, must result in a more qualified technical worker.

3. It can be concluded that the curriculum in animal science is in many ways divorced from reality. In other words, the curriculum is developed without consideration of community needs and by people other than those who are directly affected by it.

4. The vocational agricultural animal science curriculum is not based on the needs of the community, especially as to competencies required by the animal science industry.

5. The level of competence of the graduates in animal science is not as high as it should be to be successful, fulfilling the standards of the trends in animal science.

6. In the decision-making process, only a few people, from other regions, basically from the central level, decide what should be taught. They plan and develop the curriculum. This process is in contrast to the regionalization policy which in summary means planning, developing, and executing strategies in terms of regional and local geographic, political, economic, social, and cultural characteristics.

7. There is an evident lack of communication among the different groups involved in the study.

8. It is appropriate to point out that a high degree of consistency was observed in the instrument, because of the level of agreement indicated by the majority of the respondents.

Recommendations

1. Further refine the model for curriculum development and implementation, as perceived in this study, maximizing the utilization of human, physical, and economic resources.

2. Initiate a series of carefully planned activities centered about regional and local council committee organizations, workshops, needs assessments, job analysis, and others to incorporate a wider involvement of the agricultural, rural, and educational communities in planning and development of the curriculum in animal science.

3. Attempt the establishment of an organization such as "Future Farmers of Venezuela (F.F.V.) with the philosophical conception that "Learning by Doing" provides the right paths in agriculture to improve knowledge, skills, and attitude development. Consequently, agricultural production and productivity in the region must be expected to be more fruitful in the years to come.

4. In all activities directed toward curriculum development and implementation, agencies and institutions involved should stress maximum participation and collaboration of

group representatives of current students, graduates, parents, farmers, vocational agricultural teachers, administrators, faculty of agriculture, national supervisors, and regional supervisors.

5. In all workshops and conferences directed toward curriculum development and implementation, attention should be called to the part which student attitude and motivation play in improving knowledge and skills acquisition.

6. Work with the Ministry of Agriculture in collaboration to delineate objectives and goals for rural and community development.

7. The process of curriculum development should incorporate the skills of university professors and workers in institutions such as experimental stations, with the goal of an effective and integrated system where research can occupy a position closer to the local high school in order to contribute to the entire community and provide for an improvement of the well-being of the country, man, and society in general.

8. Job analysis should be used as a basis and as a tool in establishing teacher and learning experiences. This provides the foundations for development and implementation of animal science curriculum in vocational agriculture in the region.

A Model Graphically Depicting A Curriculum Process Approach

The model comprises an organized sysnthesis of ideas and concepts cited by scholars such as Tyler (52), Taba (7), Gagne and Briggs (53), as well as the findings which are peculiar to this study.

Major emphasis is localized in the involvement of community representatives, i.e., parents, farmers, current students, graduates, teachers, faculty of agriculture, and national and regional supervisors who expressed the desire to participate when they were consulted.

Each step within the process of curriculum development and implementation follows vertical and horizontal articulation. In other words, goals and objectives should have a truly and real relationship with the needs of the community and learning activities.

Interdisciplinary council committees, regional and local, must be structured to establish the guidelines for the entire process.

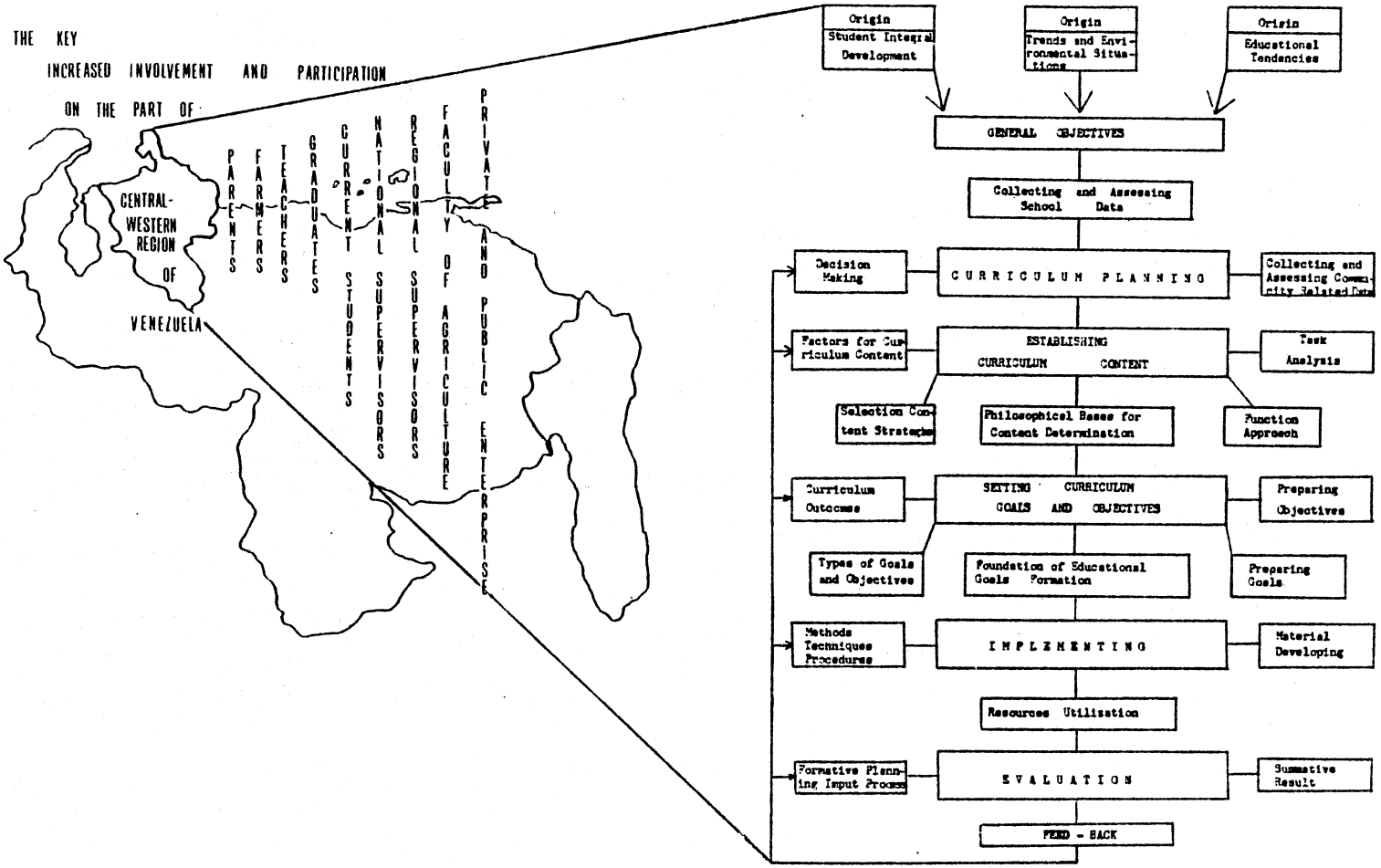


Figure 5. The Essential Ingredients for a More Effective Animal Science Curriculum in the Central-Western Region of Venezuela

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APPENDIXES

APPENDIX A

EXAMPLES OF FREQUENCY DISTRIBUTION

Question 1	Current Students	N=28	San Luis								Question 1	Graduates	N=24	San Luis							
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean		N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	15	53.6	3	10.7	2	7.1	2	7.1	6	21.4	2.321		15	62.5	3	12.5	2	8.3	2	8.3	2	8.3	1.875
2. Preparing livestock rations.	15	53.6	6	21.4	4	14.3	3	10.7	-	-	1.821		15	62.5	2	8.3	3	12.5	3	12.5	1	4.2	1.875
3. Identifying digestive tracts parts in livestock.	17	60.7	5	17.9	6	21.4	-	-	-	-	1.607		14	58.3	1	4.2	5	20.8	4	16.7	-	-	1.958
4. Animal vaccination.	2	7.1	5	17.9	13	46.4	2	7.1	6	21.4	3.179		13	54.2	1	4.2	1	4.2	6	25.0	3	12.5	2.375
5. Detecting and determining diseases of livestock.	5	17.9	8	28.6	8	28.6	5	17.9	2	7.1	2.679		15	62.5	-	-	5	20.8	1	4.2	3	12.5	2.042
6. Giving first aid to livestock.	3	10.7	8	28.6	9	32.1	5	17.9	3	10.7	2.893		14	58.3	1	4.2	3	12.5	2	8.3	4	16.7	2.208
7. Developing a livestock health plan.	12	42.9	4	14.3	9	32.1	3	10.7	-	-	2.107		15	62.5	1	4.2	5	20.8	2	8.3	1	4.2	1.875
8. Identifying, preventing and controlling diseases by parasites (Internal and External).	3	10.7	8	28.6	10	35.7	4	14.3	3	10.7	2.857		14	58.3	1	4.2	5	20.8	2	8.3	2	8.3	2.042
9. Castrating various kinds of livestock.	10	35.7	6	21.4	9	32.1	1	3.6	2	7.1	2.250		12	50.0	4	16.7	5	20.8	3	12.5	-	-	1.958
10. Developing a livestock production project.	13	46.4	6	21.4	5	17.9	2	7.1	2	7.1	2.071		14	58.3	3	14.5	4	16.7	2	8.3	1	4.2	1.875
11. Identifying the different parts and cuts in livestock cascass.	7	25.0	3	10.7	10	35.7	5	17.9	3	10.7	2.786		15	62.5	2	8.3	5	20.8	1	4.2	1	4.2	1.792
12. Keeping production records in livestock.	22	78.6	1	3.6	1	3.6	2	7.1	2	7.1	1.607		18	75.0	1	4.2	3	12.5	1	4.2	1	4.2	1.583
13. Developing inventory in various kinds of livestock enterprises.	21	75.0	2	7.1	2	7.1	3	10.1	-	-	1.536		17	70.8	2	8.3	3	12.5	1	4.2	1	4.2	1.625
14. Calculating costs and benefits in a livestock enterprises.	9	32.1	9	32.1	6	21.4	2	7.1	2	7.1	2.250		17	70.8	2	8.3	3	12.5	-	-	2	8.3	1.667
15. Artifitial insemination.	6	21.4	4	14.3	14	50.0	2	7.1	2	7.1	2.643		17	70.8	2	8.3	4	16.7	-	-	1	4.2	1.583
16. Selecting livestock.	9	32.1	6	21.4	8	28.6	2	7.1	3	10.7	2.429		15	62.5	1	4.2	5	20.8	2	8.3	1	4.2	1.875
17. Recognizing pregnancy in livestock.	6	21.4	6	21.4	8	28.6	2	7.1	6	21.4	2.857		15	62.5	2	8.3	5	20.8	-	-	2	8.3	1.833
18. Identifying reproductive tract in livestock.	2	7.1	8	28.6	12	42.9	4	14.3	2	7.1	2.857		14	58.3	1	4.2	7	29.2	2	8.3	-	-	1.857
19. Identifying strus cycle in various species of livestock.	3	10.7	8	28.6	6	21.4	7	25.0	4	14.3	3.036		14	58.3	2	8.3	5	20.8	3	12.5	-	-	1.857
20. Identifying breeds of livestock.	2	7.1	5	17.9	9	32.1	6	21.4	6	21.4	3.321		13	54.2	2	8.3	4	16.7	4	16.7	1	4.2	2.083

Question 1	Parents	N=11	San Luis																				
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Question 1	Farmers	N=16	San Luis								
	N	%	N	%	N	%	N	%	N	%	Mean		Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
													N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting Feed for livestock.	10	90.9	-	--	-	-	--	-	-	-	1.182		12	75.0	1	6.3	1	6.3	--	-	2	12.5	1.688
2. Preparing livestock ations	11	100.0	-		-	-	-	-	-	-	1.000		12	75.0	1	6.3	1	6.3	1	6.3	1	6.3	1.625
3. Identifying digestive tracts parts in livestock.	10	90.9	-	-	1	9.1	-	-	-	-	1.182		14	87.5	-	-	2	12.5	-	-	-	-	1.182
4. Animal Vaccination.	10	90.9	-	-	-	-	1	9.1	-	-	1.273		10	62.5	1	6.3	2	12.5	2	12.5	1	6.3	1.273
5. Detecting and determining diseases of livestock.	10	90.9	-	-	-	-	1	9.1	-	-	1.273		11	68.8	1	6.3	1	6.3	3	18.8	-	-	1.750
6. Giving first aids to livestock.	10	90.9	-	-	-	-	1	9.1	-	-	1.273		11	68.8	1	6.3	1	6.3	2	12.5	1	6.3	1.813
7. Developing a livestock health plan.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		13	81.3	-	-	1	6.3	1	6.3	1	6.3	1.563
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External).	10	90.9	1	9.1	-	-	-	-	-	-	1.090		13	81.3	-	-	1	6.3	1	6.3	1	6.3	1.563
9. Castrating various kinds of livestock.	10	90.9	-	-	1	9.1	-	-	-	-	1.182		10	62.5	1	6.3	4	25.0	1	6.3	-	-	1.750
10. Developing a livestock production project.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		12	75.0	-	-	2	12.5	2	12.5	-	-	1.625
11. Identifying the different parts and cuts in livestock cascass.	11	100.0	-	-	-	-	-	-	-	-	1.000		13	81.3	-	-	3	18.3	-	-	-	-	1.375
12. Keeping production records in livestock.	11	100.0	-	-	-	-	-	-	-	-	1.000		13	81.3	-	-	1	6.3	1	6.3	1	6.3	1.653
13. Developing inventory in various kinds of livestock enterprises.	11	100.0	-	-	-	-	-	-	-	-	1.000		13	81.3	-	-	2	12.5	1	6.3	-	-	1.438
14. Calculating costs and benefits in a livestock enterprises.	11	100.0	-	-	-	-	-	-	-	-	1.000		13	81.3	-	-	1	6.3	1	6.3	1	6.3	1.563
15. Artifitial insemination.	11	100.0	-	-	-	-	-	-	-	-	1.000		12	75.0	-	-	-	-	3	18.3	1	6.3	1.813
16. Selecting livestock.	10	90.9	-	-	1	9.1	-	-	-	-	1.182		12	75.0	1	6.3	1	6.3	1	6.3	1	6.3	1.625
17. Recognizing pregnancy in livestock.	11	100.0	-	-	-	-	-	-	-	-	1.000		12	75.0	-	-	2	12.5	2	12.5	-	-	1.625
18. Identifying reproductive tract in livestock.	11	100.0	-	-	-	-	-	-	-	-	1.000		14	87.5	-	-	-	-	2	12.5	-	-	1.375
19. Identifying strus cycle in various species of livestock.	11	100.0	-	-	-	-	-	-	-	-	1.000		11	68.8	2	12.5	1	6.3	1	6.3	1	6.3	1.688
20. Identifying breeds of livestock.	11	100.0	-	-	-	-	-	-	-	-	1.000		12	75.0	1	6.3	1	6.3	1	6.3	1	6.3	1.625

Question 1	Teachers		N= 10				San Luis		
Never 1		Seldom 2		Sometimes 3		Frequenlty 4		Always 5		
N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for a livestock.										
3	30.0	2	20.0	3	30.0	2	20.0	-	-	2.400
2. Preparing livestock rations.										
5	50.0	2	20.0	2	20.0	1	10.0	-	-	1.900
3. Identifying digestive tracts parts in livestock.										
3	30.0	1	10.0	5	50.0	1	10.0	-	-	2.400
4. Animal vaccination.										
3	30.0	2	20.0	1	10.0	2	20.0	2	20.0	2.800
5. Detecting and determining diseases of livestock.										
4	40.0	1	10.0	2	20.0	-	-	3	30.0	2.700
6. Giving first aid to livestock.										
2	20.0	2	20.0	2	20.0	3	30.0	1	10.0	2.900
7. Developing a livestock health plan.										
4	40.0	1	10.0	2	20.0	2	20.0	1	10.0	2.500
8 Identifying, preventing and controlling diseases produced by parasites (Internal and External)										
3	30.0	2	20.0	2	20.0	2	20.0	1	10.0	2.600
9. Castrating various kinds of livestock.										
3	30.0	1	10.0	4	40.0	1	10.0	1	10.0	2.600
10. Developing a livestock production project.										
3	30.0	2	20.0	2	20.0	2	20.0	1	10.0	2.600
11. Identifying the different parts and cuts in livestock cascass.										
3	30.0	3	30.0	4	40.0	-	-	-	-	2.100
12. Keeping production records in livestock.										
5	50.0	-	-	4	40.0	1	10.0	-	-	2.100
13. Developing inventory in various kinds of livestock enterprises.										
4	40.0	1	10.0	3	30.0	2	20.0	-	-	2.300
14. Calculating costs and benefits in a livestock enterprises.										
4	40.0	3	30.0	2	20.0	-	-	1	10.0	2.100
15. Artifitial insemination.										
4	40.0	1	10.0	3	30.0	1	10.0	1	10.0	2.400
16. Selecting livestock.										
4	40.0	1	10.0	1	10.0	3	30.0	1	10.0	2.600
17. Recognizing pregnancy in livestock.										
3	30.0	1	10.0	3	30.0	1	10.0	2	20.0	2.800
18. Identifying reproductive tract in livestock.										
3	30.0	2	20.0	3	30.0	1	10.0	1	10.0	2.540
19. Identifying strus cycle in various species of livestock.										
3	30.0	-	-	3	30.0	3	30.0	1	10.0	2.900
20. Identifying breeds of livestock.										
3	30.0	1	10.0	3	30.0	2	20.0	1	10.0	2.700

Question 1	Current Students										N=25	Mayorica									
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	21	84.0	3	12.0	1	4.0	-	-	-	-	1.200	10	83.3	1	8.3	1	8.3	-	-	-	-	1.250
2. Preparing livestock rations.	24	96.0	-	-	1	4.0	-	-	-	-	1.080	10	83.3	1	8.3	1	8.3	-	-	-	-	1.250
3. Identifying digestive tracts parts in livestock.	19	76.0	1	4.0	3	12.0	-	-	2	8.0	1.600	11	91.7	1	8.3	-	-	-	-	-	-	1.083
4. Animal vaccination.	16	64.0	2	8.0	3	12.0	2	8.0	2	8.0	1.800	10	83.3	1	8.3	1	8.3	-	-	-	-	1.250
5. Detecting and determining diseases of livestock.	17	68.0	2	8.0	5	20.0	1	4.0	-	-	1.600	9	75.0	3	25.0	1	8.3	-	-	-	-	1.250
6. Giving first aid to livestock.	19	76.0	-	-	4	16.0	-	-	2	8.0	1.640	11	91.7	1	8.3	-	-	-	-	-	-	1.083
7. Developing a livestock health plan.	17	68.0	4	16.0	2	8.0	1	4.0	1	4.0	1.600	9	75.0	3	25.0	-	-	-	-	-	-	1.083
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External).	17	68.0	-	-	2	8.0	5	20.0	1	4.0	1.920	9	75.0	2	16.7	1	8.3	-	-	-	-	1.250
9 Castrating various kinds of livestock.	18	72.0	1	4.0	3	12.0	1	4.0	2	8.0	1.720	8	66.7	1	8.3	1	8.3	2	16.7	-	-	1.333
10. Developing a livestock production project.	18	72.0	4	16.0	3	12.0	-	-	-	-	1.400	11	91.7	1	8.3	-	-	-	-	-	-	1.750
11. Identifying the different parts and cuts in livestock cascass.	19	76.0	1	4.0	3	12.0	1	4.0	1	4.0	1.560	8	66.7	3	25.0	-	-	1	8.3	-	-	1.083
12. Keeping production records in livestock.	23	92.0	2	8.0	-	-	-	-	-	-	1.080	9	75.0	3	25.0	-	-	-	-	-	-	1.500
13. Developing inventory in various kinds of livestock enterprises.	22	88.0	1	4.0	1	4.0	1	4.0	-	-	1.240	9	75.0	1	8.3	2	16.7	-	-	-	-	1.417
14. Calculating costs and benefits in a livestock enterprises.	23	92.0	1	4.0	1	4.0	-	-	-	-	1.120	10	83.3	-	-	1	8.3	1	8.3	-	-	1.417
15. Artifitial insemination.	21	84.0	3	12.0	-	-	-	-	1	4.0	1.280	10	83.3	1	8.3	-	-	-	-	1	8.3	1.418
16. Selecting livestock.	17	68.0	4	16.0	3	12.0	1	4.0	-	-	1.520	10	83.3	2	16.7	-	-	-	-	-	-	1.167
17. Recognizing pregnancy in livestock.	18	72.0	2	8.0	4	16.0	-	-	1	4.0	1.560	10	83.3	1	8.3	1	8.3	-	-	-	-	1.250
18. Identifying reproductive tract in livestock.	18	72.0	-	-	4	16.0	1	4.0	2	8.0	1.760	9	75.0	2	16.7	-	-	1	8.3	-	-	1.417
19. Identifying strus cycle in various species of livestock.	19	76.0	1	4.0	2	8.0	2	8.0	1	4.0	1.600	11	91.7	1	8.3	-	-	-	-	-	-	1.083
20. Identifying breeds of livestock.	16	64.0	3	12.0	3	12.0	1	4.0	2	8.0	1.800	10	83.3	1	8.3	-	-	1	8.3	-	-	1.333

Question 1	Parents	N=30	Mayorica								Question 1	Farmers	N=8	Mayorica							
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean		N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
2. Preparing livestock rations.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
3. Identifying digestive tracts parts in livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
4. Animal vaccination.	26	86.7	1	3.3	2	6.7	-	-	1	3.3	1.300		8	100.0	-	-	-	-	-	-	-	-	1.000
5. Detecting and determining diseases of livestock.	27	90.0	2	6.7	1	3.3	-	-	-	-	1.333		8	100.0	-	-	-	-	-	-	-	-	1.000
6. Giving first aid to livestock.	27	90.0	2	6.7	1	3.3	-	-	-	-	1.333		8	100.0	-	-	-	-	-	-	-	-	1.000
7. Developing a livestock health plan.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	28	93.3	1	3.3	-	-	-	-	-	-	1.166		8	100.0	-	-	-	-	-	-	-	-	1.000
9. Castrating various kinds of livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
10. Developing a livestock production project.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
11. Identifying the different parts and cuts in livestock cascass.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
12. Keeping production records in livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
13. Developing inventory in various kinds of livestock enterprises.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
14. Calculating costs and benefits in a livestock enterprises.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
15. Artifitial insemination.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
16. Selecting livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
17. Recognizing pregnancy in livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
18. Identifying reproductive tract in livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
19. Identifying strus cycle in various species of livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000
20. Identifying breeds of livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000		8	100.0	-	-	-	-	-	-	-	-	1.000

Question 1	Teachers		N=10		Mayorica
	Never 1	Seldom 2	Sometimes 3	Frequently 4	Always 5	
	N %	N %	N %	N %	N %	Mean
1. Selecting feeds for livestock.	4 40.0	1 10.0	5 50.0	- -	- -	2.100
2. Preparing livestock rations.	5 50.0	2 20.0	3 30.0	- -	- -	1.800
3. Identifying digestive tracts parts in livestock.	5 50.0	- -	3 30.0	1 10.0	1 10.0	2.300
4. Animal vaccination.	4 40.0	- -	2 20.0	1 10.0	3 30.0	2.900
5. Detecting and determining diseases of livestock.	5 50.0	- -	4 40.0	1 10.0	- -	2.100
6. Giving first aid to livestock.	5 50.0	- -	2 20.0	3 30.0	- -	2.300
7. Developing a livestock health plan.	5 50.0	- -	2 20.0	3 30.0	- -	2.300
8. Identifying, preventing and controlling diseases produced by parasites. (Internal and External).	4 40.0	- -	3 30.0	1 10.0	2 20.0	2.700
9. Castrating various kinds of livestock.	4 40.0	- -	3 30.0	1 10.0	2 20.0	2.700
10. Developing a livestock production project.	5 50.0	- -	5 50.0	- -	- -	2.000
11. Identifying the different parts and cuts in livestock cascass.	5 50.0	1 10.0	3 30.0	1 10.0	- -	2.000
12. Keeping production records in livestock.	6 60.0	- -	4 40.0	- -	- -	1.800
13. Developing inventory in various kinds of livestock enterprises.	6 60.0	1 10.0	2 20.0	1 10.0	- -	1.800
14. Calculating costs and benefits in a livestock enterprises.	6 60.0	3 30.0	1 10.0	- -	- -	1.500
15. Artificial insemination.	3 30.0	2 20.0	2 20.0	1 10.0	2 20.0	2.700
16. Selecting livestock.	6 60.0	1 10.0	2 20.0	1 10.0	- -	1.800
17. Recognizing pregnancy in livestock.	3 30.0	1 10.0	3 30.0	3 30.0	- -	2.600
18. Identifying reproductive tract in livestock.	5 50.0	1 10.0	2 20.0	1 10.0	1 10.0	2.200
19. Identifying strus cycle in various species of livestock.	4 40.0	1 10.0	1 10.0	3 30.0	1 10.0	2.600
20. Identifying breeds of livestock.	5 50.0	- -	3 30.0	1 10.0	1 10.0	2.300

Question 1	Current Students										N= 19		Aregue									
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5	
	N	%	N	%	N	%	N	%	N	%	Mean		N	%	N	%	N	%	N	%	Mean	
1. Selecting feeds for livestock.	17	89.5	2	10.5	-	-	-	-	-	-	1.105		3	21.4	3	21.4	7	50.0	1	7.1	-	-	2.429
2. Preparing livestock rations.	17	89.5	1	5.3	1	5.3	-	-	-	-	1.158		3	21.4	2	14.3	9	64.3	-	-	-	-	2.429
3. Identifying digestive tracts parts in livestock.	13	68.4	1	5.3	4	21.1	1	5.3	-	-	1.632		1	7.1	5	35.7	6	42.9	1	7.1	1	7.1	2.714
4. Animal vaccination.	12	63.2	4	21.1	3	15.8	-	-	-	-	1.526		1	7.1	1	7.1	2	14.3	4	28.6	6	42.9	3.929
5. Detecting and determining diseases of livestock.	14	73.7	3	15.8	1	5.3	-	-	1	5.3	1.474		2	14.3	2	14.3	6	42.9	1	7.1	3	21.4	3.071
6. Giving first aid to livestock.	14	73.7	3	15.8	2	10.5	-	-	-	-	1.368		2	14.3	1	7.1	4	28.6	1	7.1	6	42.9	3.571
7. Developing a livestock health plan.	14	73.7	2	10.5	2	10.5	-	-	1	5.3	1.526		1	7.1	7	50.0	4	28.6	2	14.3	-	-	2.500
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External).	12	63.2	5	26.3	1	5.3	1	5.3	-	-	1.526		1	7.1	2	14.3	7	50.0	2	14.3	2	14.3	3.143
9. Castrating various kinds of livestock.	16	84.2	2	10.5	1	5.3	-	-	-	-	1.211		1	7.1	4	28.6	3	21.4	3	21.4	2	14.3	3.071
10. Developing a livestock production project.	16	84.2	2	10.5	1	5.3	-	-	-	-	1.211		6	42.9	4	28.6	3	21.4	1	7.1	-	-	1.929
11. Identifying the different parts and cuts in livestock cascass.	12	63.2	3	15.8	3	15.8	1	5.3	-	-	1.632		3	21.4	4	28.6	5	35.7	1	7.1	1	7.1	2.500
12. Keeping production records in livestock.	16	84.2	2	10.5	1	5.3	-	-	-	-	1.211		5	35.7	6	42.9	2	14.3	-	-	1	7.1	2.000
13. Developing inventory in various kinds of livestock enterprises.	16	84.2	1	5.3	2	10.5	-	-	-	-	1.263		3	21.4	7	50.0	4	28.6	-	-	-	-	2.071
14. Calculating costs and benefits in a livestock enterprises.	14	73.7	1	5.3	3	15.8	-	-	1	5.3	1.579		2	14.3	6	42.9	3	21.4	2	14.3	1	7.1	2.571
15. Artifitial insemination.	16	84.2	3	15.8	-	-	-	-	-	-	1.158		6	42.9	2	14.3	4	28.6	-	-	2	14.3	2.286
16. Selecting livestock.	13	68.4	3	15.8	2	14.3	-	-	1	5.3	1.579		2	14.3	5	35.7	2	14.3	4	28.6	1	7.1	2.786
17. Recognizing pregnancy in livestock.	15	78.9	2	10.5	1	5.3	1	5.3	-	-	1.368		3	21.4	5	35.7	3	21.4	2	14.3	1	7.1	2.500
18. Identifying reproductive tract in livestock.	14	73.7	-	-	3	15.8	2	10.5	-	-	1.632		1	7.1	5	35.7	4	28.6	3	21.4	1	7.1	2.851
19. Identifying strus cycle in various species of livestock.	12	63.2	2	10.5	4	21.1	1	5.3	-	-	1.684		2	14.3	2	14.3	7	50.0	1	7.1	2	14.3	2.929
20. Identifying breeds of livestock.	11	57.9	2	10.5	4	21.1	1	5.3	1	5.3	1.895		1	7.1	3	21.4	3	21.4	5	35.7	2	14.3	3.286

Question 1	Parents		N=10		Aregue						Question 1	Farmers		N=9		Aregue					
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	8	88.9	1	11.1	-	-	-	-	-	-	1.111
2. Preparing livestock rations	10	100.0	-	-	-	-	-	-	-	-	1.000	8	88.9	1	11.1	-	-	-	-	-	-	1.111
3. Identifying digestive tracts parts in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
4. Animal vaccination	10	100.0	-	-	-	-	-	-	-	-	1.000	8	88.9	1	11.1	-	-	-	-	-	-	1.111
5. Detecting and determining diseases of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
6. Giving first aid to livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
7. Developing a livestock health plan	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
9. Castrating various kinds of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
10. Developing a livestock production project	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
11. Identifying the different parts and cuts in livestock carcass	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
12. Keeping production records in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
13. Developng inventoryin various kinds of livestock enterprises	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
14. Calculating costs and benefits in livestock enterprises	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
15. Artificial insemination	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
16. Selecting livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100,0	-	-	-	-	-	-	-	-	1.000
17. Recognizing pregnancy in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
18. Identifying reproductive tract in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
19. Identifying strus cycle in various species of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	9	100.0	-	-	-	-	-	-	-	-	1.000
20. Identifying breeds of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000	8	88.9	1	11.1	-	-	-	-	-	-	1.111

Question 1	Teachers			N=11		Aregue
	Never 1	Seldom 2	Sometimes 3	Frequently 4	Always 5	
	N %	N %	N %	N %	N %	Mean
1. Selecting feeds for livestock.	6 54.5	3 27.3	1 9.1	- -	1 9.1	1.818
2. Preparing livestock rations.	6 54.5	1 9.1	3 27.3	- -	1 9.1	2.000
3. Identifying digestive tracts parts in livestock.	6 54.5	3 27.3	1 9.1	- -	1 9.1	1.818
4. Animal vaccination.	5 45.5	- -	2 18.2	2 18.2	2 18.2	2.636
5. Detecting and determining diseases of livestock.	8 72.7	1 9.1	- -	1 9.1	1 9.1	1.727
6. Giving first aid to livestock.	5 45.5	3 27.3	1 9.1	1 9.1	1 9.1	2.091
7. Developing a livestock plan.	8 72.7	1 9.1	- -	1 9.1	1 9.1	1.727
8. Identifying, preventing and controlling diseases produced by parasites. (Internal and external).	7 63.6	3 27.3	- -	- -	1 9.1	1.636
9. Castrating various kinds of livestock.	6 54.5	1 9.1	2 18.2	1 9.1	1 9.1	2.091
10. Developing livestock production project.	6 54.5	3 27.3	1 9.1	- -	1 9.1	1.818
11. Identifying the different parts and cuts in livestock cascass.	7 63.7	2 18.2	1 9.1	- -	1 9.1	1.727
12. Keeping production records in livestock.	9 81.9	1 9.1	- -	- -	1 9.1	1.455
13. Developing inventory in various kinds of livestock enterprises.	9 81.9	- -	1 9.1	- -	1 9.1	1.546
14. Calculating costs and benefits in a livestock enterprises.	8 72.7	1 9.1	1 9.1	- -	1 9.1	1.636
15. Artificial insemination.	5 45.5	4 36.4	1 9.1	- -	1 9.1	1.909
16. Selecting livestock.	5 45.5	4 36.4	1 9.1	- -	1 9.1	1.909
17. Recognizing pregnancy in livestock.	8 72.7	1 9.1	- -	1 9.1	1 9.1	1.727
18. Identifying reproductive tract in livestock.	7 63.6	3 27.3	- -	- -	1 9.1	1.626
19. Identifying strus cycle in various species of livestock.	7 63.6	3 27.3	- -	- -	1 9.1	1.636
20. Identifying breeds of livestock.	4 36.4	3 27.3	2 18.2	1 9.1	1 9.1	2.273

Question 1	Current Students										N=35	Agua Blanca									
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequenlty 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	14	40.0	7	20.0	8	22.9	6	17.1	-	-	2.171	9	69.2	2	15.4	2	15.4	-	-	-	-	1.462
2. Preparing livestock rations.	20	57.1	5	14.3	4	11.4	5	14.3	1	2.9	1.914	10	76.9	1	7.7	2	15.4	-	-	-	-	1.385
3. Identifying digestive tracts parts in livestock.	8	22.9	12	34.3	12	34.3	2	5.7	1	2.9	2.314	10	76.9	-	-	2	15.4	1	7.7	-	-	1.539
4. Animal vaccination	7	20.0	-	-	6	17.1	16	45.7	6	17.1	3.400	9	69.2	-	-	-	-	1	7.7	3	23.1	2.154
5. Detecting and determining diseases in livestock	8	22.9	3	8.6	10	28.6	9	25.7	5	14.3	3.000	9	69.2	-	-	2	15.4	-	-	2	15.4	1.923
6. Giving first aid to livestock	7	20.0	7	20.0	8	22.9	6	17.1	7	20.0	2.971	9	69.2	-	-	1	7.7	1	7.7	2	15.4	2.000
7. Developing a livestock health plan	7	20.0	7	20.0	17	48.6	4	11.4	-	-	2.514	9	69.2	1	7.7	1	7.7	1	7.7	1	7.7	1.769
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	8	22.9	5	14.3	5	14.3	12	34.3	5	14.3	3.029	9	69.2	1	7.7	-	-	2	15.4	1	7.7	1.846
9. Castrating various kinds of livestock	7	20.0	7	20.0	11	31.4	6	17.1	4	11.4	2.800	9	69.2	1	7.7	-	-	2	15.4	1	7.7	1.846
10. Developing a livestock production project	14	40.0	9	25.7	9	25.7	2	5.7	1	2.9	2.057	10	76.9	1	7.7	1	7.7	-	-	1	7.7	1.539
11. Identifying the different parts and cuts in livestock carcass	13	37.1	11	31.4	10	28.6	1	2.9	-	-	1.971	10	76.9	1	7.7	1	7.7	1	7.7	-	-	1.462
12. Keeping production records in livestock	23	65.7	9	25.7	2	5.7	-	-	1	2.9	1.486	13	100.0	-	-	-	-	-	-	-	-	1.000
13. Developing inventory in various kinds of enterprises	22	62.9	10	28.6	2	5.7	-	-	1	2.9	1.514	11	84.6	1	7.7	1	7.7	-	-	-	-	1.231
14. Calculating costs and benefits in livestock enterprises	13	37.1	10	28.6	10	28.6	2	5.7	-	-	2.029	12	92.3	-	-	-	-	1	7.7	-	-	1.231
15. Artificial insemination	25	71.4	4	11.6	5	14.3	-	-	1	2.9	1.514	11	84.6	-	-	1	7.7	-	-	1	7.7	1.462
16. Selecting livestock.	14	40.0	5	14.3	13	37.1	3	8.6	-	-	2.143	10	76.9	-	-	2	15.4	-	-	1	7.7	1.615
17. Recognizing pregnancy in livestock	11	31.4	4	11.4	9	25.7	6	17.1	5	14.3	2.714	9	69.2	3	23.1	-	-	-	-	1	7.7	1.539
18. Identifying reproductive tract in livestock.	6	17.1	3	8.6	21	60.0	4	11.4	1	2.9	2.743	9	69.2	-	-	3	23.1	-	-	1	7.7	1.769
19. Identifying sturs cycle in various species of livestock.	6	17.1	9	25.7	7	20.0	9	25.7	4	11.4	2.886	9	69.2	-	-	1	7.7	2	15.4	1	7.7	1.923
20. Identifying breeds of livestock.	5	14.3	2	5.7	17	48.6	6	17.1	5	14.3	3.114	8	61.5	2	15.4	-	-	2	15.4	1	7.1	1.923

Question 1	Parents										N=10		Agua Blanca										Question 1		Farmers										N= 6		Agua Blanca									
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5														Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5															
	N	%	N	%	N	%	N	%	N	%	Mean												N	%	N	%	N	%	N	%	N	%	Mean													
1. Selecting feeds for livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
2. Preparing livestock rations	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
3. Identifying digestive tracts parts in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
4. Animal vaccination	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
5. Detecting and determining diseases of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
6. Giving first aid to livestock	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
7. Developing a livestock health plan	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
9. Castrating various kinds of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
10. Developing a livestock production project	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
11. Identifying the different parts and cuts in livestock carcass	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
12. Keeping production records in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
13. Developing inventory in various kinds of livestock enterprises	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
14. Calculating costs and benefits in a livestock enterprises	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
15. Artificial insemination	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
16. Selecting livestock	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
17. Recognizing pregnancy in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
18. Identifying reproductive tract in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													
19. Identifying strus cycle in various species of livestoc	9	90.0	1	10.0	-	-	-	-	-	-	1.100												6	100.0	-	-	-	-	-	-	-	-	1.000													
20. Identifying breeds of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000												6	100.0	-	-	-	-	-	-	-	-	1.000													

Question 1	Teachers		N=4		Agua Blanca		
	Never 1	Seldom 2	Sometimes 3	Frequently 4	Always 5		
	N %	N %	N %	N %	N %		Mean
1. Selecting feeds for livestock	2 50.0	- -	- -	1 25.0	1 25.0		2.750
2. Preparing livestock rations	2 50.0	1 25.0	- -	I 25.0	- -		2.000
3. Identifying digestive tract in livestock	- -	1 25.0	1 25.0	1 25.0	1 25.0		3.500
4. Animal vaccination	- -	- -	1 25.0	2 50.0	1 25.0		4.000
5. Detecting and determining diseases in livestock	- -	- -	1 25.0	1 25.0	2 50.0		4.250
6. Giving first aid to livestock	- -	1 25.0	- -	- -	3 75.0		4,250
7. Developing a livestock health plan	- -	- -	1 25.0	1 25.0	2 50.0		4.250
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	- -	- -	2 50.0	- -	2 50.0		4.000
9. Castrating various kinds of livestock	- -	- -	1 25.0	2 25.0	1 25.0		4.000
10. Developing a livestock production project	- -	- -	1 25.0	- -	3 75.0		4.500
11. Identifying the different parts and cuts in livestock carcass	- -	- -	3 75.0	- -	1 25.0		3.500
12. Keeping production records in livestock	- -	- -	3 75.0	1 25.0	- -		3.250
13. Developing inventory in various kinds of livestock enterprises	- -	- -	1 25.0	1 25.0	2 50.0		4.250
14. Calculating costs and benefits in livestock enterprises	1 25.0	1 25.0	- -	1 25.0	1 25.0		3.000
15. Artificial insemination	- -	1 25.0	1 25.0	1 25.0	1 25.0		3.500
16. Selecting livestock	- -	1 25.0	2 50.0	- -	1 25.0		3.250
17. Recognizing pregnancy in livestock	- -	2 50.0	- -	1 25.0	1 25.0		3.250
18. Identifying reproductive tract in livestock	- -	- -	2 50.0	1 25.0	1 25.0		3.750
19. Identifying strus cycle in various kinds of livestock	- -	- -	1 25.0	1 25.0	2 50.0		4.250
20. Identifying breeds in livestock	- -	1 25.0	1 25.0	1 25.0	1 25.0		3.500

Question 2	Current Students										N= 28										San Luis
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Question 2				Graduates					N= 24		San Luis
												Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5	
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	18	64.3	2	7.1	5	17.9	1	3.6	2	7.1	1.823	4	16.7	4	16.7	9	37.5	5	20.8	2	8.3	2.875
2. Preparing livestock rations.	16	57.1	8	28.6	3	10.7	-	-	1	3.6	1.643	3	12.5	7	29.2	10	41.7	4	16.7	-	-	2.625
3. Identifying digestive tracts parts in livestock.	5	17.9	9	32.1	12	42.9	2	7.1	-	-	2.393	3	12.5	3	12.5	13	54.7	5	20.8	-	-	2.833
4. Animal vaccination.	1	3.6	4	14.3	15	53.6	4	14.3	4	14.3	3.214	-	-	2	8.3	9	37.5	10	41.7	3	12.5	3.583
5. Detecting and determining diseases of livestock.	6	21.4	9	32.1	12	42.9	1	3.6	-	-	2.286	3	12.5	5	20.8	13	54.7	3	12.5	-	-	2.667
6. Giving first aid to livestock.	4	14.3	9	32.1	11	39.3	2	7.1	2	7.1	2.607	1	4.2	3	12.5	15	62.5	4	16.7	1	4.2	3.042
7. Developing a livestock plan.	13	46.4	10	35.7	3	10.7	1	3.6	1	3.6	1.821	3	12,5	2	8.3	13	54.7	5	20.8	1	4.2	2.958
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External).	5	17.9	6	21.4	11	39.3	3	10.7	3	10.7	2.750	2	8.3	3	12.5	11	45.8	8	33.3	-	-	3.042
9. Castrating various kinds of livestock.	2	7.1	3	10.7	15	57.1	6	21.4	1	3.6	3.036	1	4.2	3	12.5	14	58.3	5	20.8	1	4.2	3.083
10. Developing a livestock production project.	15	53.6	5	17.9	4	14.3	2	7.1	2	7.1	1.964	5	20.8	5	20.8	10	41.7	3	12.5	1	4.2	2.583
11. Identifying the different parts and cuts in livestock cascass.	5	17.9	6	21.4	10	35.7	6	21.4	1	3.6	2.714	2	8.3	7	29.2	12	50.0	3	12.5	-	-	2.667
12. Keeping production records in livestock.	21	75.0	5	17.9	1	3.6	-	-	1	3.6	1.392	8	33.3	5	20.8	8	33.3	2	8.3	1	4.2	2.292
13. Developing inventory in various kinds of livestock enterprises.	23	82.1	3	10.7	1	3.6	1	3.6	-	-	1.286	7	29.2	5	20.8	9	37.5	2	8.3	1	4.2	2.375
14. Calculating costs and benefits in livestock enterprises.	20	71.4	5	17.9	3	10.7	-	-	-	-	1.393	4	16.7	7	29.2	9	37.5	3	12.5	1	4.2	2.583
15. Artificial insemination.	15	53.6	8	28.6	5	17.9	-	-	-	-	1.643	6	25.0	4	16.7	10	41.7	3	12.5	1	4.2	2.542
16. Selecting livestock.	10	35.7	7	25.0	7	25.0	4	14.3	-	-	2.179	3	12.5	7	29.2	7	29.2	5	20.8	2	8.3	2.833
17. Recognizing pregnancy in livestock.	6	21.4	7	25.0	9	32.1	4	14.3	2	7.1	2.607	4	16.7	5	20.8	12	50.0	3	12.5	-	-	2.583
18. Identifying reproductive tract in livestock.	1	3.6	9	32.1	12	42.9	5	17.9	1	3.6	2.857	2	8.3	3	12.5	15	62.5	4	16.7	-	-	2.875
19. Identifying strus cycle in various species of livestock.	1	3.6	8	28.6	10	35.7	7	25.0	2	7.1	3.036	2	8.3	6	25.0	12	50.0	4	16.7	-	-	2.750
20. Identifying breeds of livestock.	-	-	3	10.7	11	39.3	7	25.0	7	25.0	3.643	1	4.2	3	12.5	11	45.8	7	29.2	2	8.3	3.250

Question 2	Parents											Question 2	Farmers									
	N=11								San Luis				N= 16								San Luis	
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5	
	N	%	N	%	N	%	N	%	N	%	Mean		N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		11	68.8	1	6.3	3	18.8	-	-	1	6.3	1.687
2. Preparing livestock rations.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		12	75.0	1	6.3	2	12.5	1	6.3	-	-	1.500
3. Identifying digestive tract parts in livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		14	87.5	-	-	-	-	2	12.5	-	-	1.375
4. Animal vaccination.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		8	50.0	-	-	6	37.5	2	12.5	-	-	2.125
5. Detecting and determining diseases of livestock.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		8	50.0	2	12.5	4	25.0	1	6.3	1	6.3	2.063
6. Giving first aid to livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		8	50.0	1	6.3	5	31.3	1	6.3	1	6.3	2.125
7. Developing a livestock health plan.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		11	68.8	1	6.3	1	6.3	2	12.5	1	6.3	1.813
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External).	10	90.9	1	9.1	-	-	-	-	-	-	1.090		11	68.8	1	6.3	2	12.5	1	6.3	1	6.3	1.750
9. Castrating various kinds of livestock.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		9	56.3	1	6.3	4	25.0	1	6.3	1	6.3	2.000
10. Developing a livestock production project.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		12	75.0	-	-	3	18.8	1	6.3	-	-	1.563
11. Identifying the different parts and cuts in livestock cascass.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		12	75.0	1	6.3	2	12.5	1	6.3	-	-	1.500
12. Keeping production records in livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		13	81.3	-	-	1	6.3	2	12.5	-	-	1.500
13. Developing inventory in various kinds of livestock enterprises.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		13	81.3	-	-	1	6.3	2	12.5	-	-	1.500
14. Calculating costs and benefits in livestock enterprises.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		13	81.3	1	6.3	1	6.3	1	6.3	-	-	1.375
15. Artificial insemination.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		12	75.0	-	-	-	-	3	18.8	1	6.3	1.813
16. Selecting livestock.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		9	56.3	3	18.8	3	18.8	1	6.3	-	-	1.750
17. Recognizing pregnancy in livestock.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		9	56.3	1	6.3	4	25.0	2	12.5	-	-	1.938
18. Identifying reproductive tract in livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		12	75.0	1	6.3	1	6.3	1	6.3	1	6.3	1.625
19. Identifying strus cycle in various species of livestock.	10	90.9	1	9.1	-	-	-	-	-	-	1.090		10	62.5	3	18.8	1	6.3	1	6.3	1	6.3	1.750
20. Identifying breeds of livestock.	9	81.8	2	18.2	-	-	-	-	-	-	1.182		14	87.5	-	-	-	-	2	12.5	-	-	1.375

Question 2	Teachers		N=10		San Luis				
Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock										
3	30.0	2	20.0	2	20.0	3	30.0	-	-	2.500
2. Preparing livestock rations										
5	50.0	2	20.0	2	20.0	1	10.0	-	-	1.900
3. Identifying digestive tract parts in livestock										
2	20.0	2	20.0	5	50.0	-	-	1	10.0	2.600
4. Animal vaccination										
2	20.0	-	-	4	40.0	2	20.0	2	20.0	3.200
5. Detecting and determining diseases of livestock										
3	30.0	1	10.0	3	30.0	1	10.0	2	20.0	2.800
6. Giving first aid to livestock										
2	20.0	2	20.0	2	20.0	2	20.0	2	20.0	3.000
7. Developing a livestock health plan										
3	30.0	-	-	3	30.0	3	30.0	1	10.0	2.900
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)										
3	30.0	-	-	4	40.0	2	20.0	1	10.0	2.800
9. Castrating various kinds of livestock										
2	20.0	-	-	5	50.0	2	20.0	1	10.0	3.000
10. Developing a livestock production project										
2	20.0	3	30.0	2	20.0	1	10.0	2	20.0	2.800
11. Identifying the different parts and cuts in livestock carcass										
4	40.0	3	30.0	3	30.0	-	-	-	-	1.900
12. Keeping production records in livestock										
5	50.0	1	10.0	3	30.0	1	10.0	-	-	2.000
13. Developing inventory in various kinds of livestock enterprises										
3	30.0	3	30.0	2	20.0	2	20.0	-	-	2.300
14. Calculating costs and benefits in livestock enterprises										
3	30.0	3	30.0	3	30.0	1	10.0	-	-	2.200
15. Artificial insemination										
5	50.0	-	-	3	30.0	1	10.0	1	10.0	2.300
16. Selecting livestock										
2	20.0	3	30.0	2	20.0	2	20.0	1	10.0	2.700
17. Recognizing pregnancy in livestock										
3	30.0	1	10.0	2	20.0	4	40.0	-	-	2.700
18. Identifying reproductive tract in livestock										
2	20.0	2	20.0	4	40.0	1	10.0	1	10.0	2.700
19. Identifying strus cycle in various species of livestock										
3	30.0	-	-	3	30.0	3	30.0	1	10.0	2.900
20. Identifying breeds in livestock										
1	10.0	1	10.0	4	40.0	3	30.0	1	10.0	3.200

Question 2	Current Students					N= 25	Mayorica			Question 2	Graduates					N= 12	Mayorica		
	Never 1		Seldom 2		Sometimes 3	Frequently 4	Always 5				Never 1		Seldom 2		Sometimes 3	Frequently 4	Always 5		
	N	%	N	%	N %	N %	N %	Mean			N	%	N	%	N %	N %	N %	Mean	
1. Selecting feeds for livestock.	15	60.0	5	20.0	4 16.0	1 4.0	- -	1.640			4	33.3	4	33.3	3 25.0	1 8.3	- -	2.083	
2. Preparing livestock rations.	20	80.0	2	8.0	2 8.0	1 4.0	- -	1.360			3	25.0	5	41.7	3 25.0	1 8.3	- -	2.167	
3. Identifying digestive tract part in livestock.	13	52.0	5	20.0	1 4.0	1 4.0	- -	1.880			1	8.3	5	41.7	4 33.3	2 16.7	- -	2.583	
4. Animal vaccination.	5	20.0	3	12.0	6 24.0	6 24.0	5 20.0	3.120			2	16.7	-	-	5 41.7	3 25.0	2 16.7	3.250	
5. Detecting and determining diseases of livestock.	8	32.0	3	12.0	9 36.0	4 16.0	1 4.0	2.480			3	25.0	2	16.7	3 25.0	3 25.0	1 8.3	2.750	
6. Giving first aid to livestock.	7	28.0	3	12.0	10 40.0	2 8.0	3 12.0	2.640			3	25.0	1	8.3	5 41.7	2 16.7	1 8.3	2.750	
7. Developing a livestock health plan.	9	36.0	8	32.0	5 20.0	1 4.0	2 8.0	2.160			2	16.7	3	25.0	3 25.0	2 16.7	2 16.7	2.917	
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	6	24.0	7	28.0	5 20.0	5 20.0	2 8.0	2.600			3	25.0	2	16.7	2 16.7	5 41.7	- -	2.750	
9. Castrating various kinds of livestock.	7	28.0	6	24.0	7 28.0	3 12.0	2 8.0	2.480			1	8.3	1	8.3	6 50.0	3 25.0	1 8.3	3.167	
10. Developing a livestock production project.	14	56.0	8	32.0	2 8.0	1 4.0	- -	1.600			7	58.3	-	-	5 41.7	- -	- -	1.833	
11. Identifying the different parts and cuts in livestock cascass.	9	36.0	11	44.0	4 16.0	- -	1 4.0	1.920			4	33.3	6	50.0	2 16.7	- -	- -	1.833	
12. Keeping production records in livestock.	22	88.0	2	8.0	1 4.0	- -	- -	1.160			8	66.7	2	16.7	2 16.7	- -	- -	1.500	
13. Developing inventory in various kinds of livestock enterprises.	18	72.0	5	20.0	1 4.0	1 4.0	- -	1.400			4	33.3	3	25.0	5 41.7	- -	- -	2.083	
14. Calculating costs and benefits in livestock enterprises.	19	76.0	3	12.0	3 12.0	- -	- -	1.360			4	33.3	4	33.3	3 25.0	1 8.3	- -	2.083	
15. Artificial insemination.	18	72.0	4	16.0	1 4.0	1 4.0	1 4.0	1.520			7	58.3	3	25.0	1 8.3	1 8.3	- -	1.667	
16. Selecting livestock.	6	24.0	10	40.0	8 32.0	1 4.0	- -	2.160			3	25.0	2	16.7	5 41.7	2 16.7	- -	2.500	
17. Recognizing pregnancy in livestock.	9	36.0	7	28.0	5 20.0	3 12.0	1 4.0	2.200			4	33.3	4	33.3	2 16.7	1 8.3	1 8.3	2.250	
18. Identifying reproductive tract in livestock.	10	40.0	4	16.0	7 28.0	3 12.0	1 4.0	2.240			3	25.0	3	25.0	3 25.0	3 25.0	- -	2.500	
19. Identifying strus cycle in various species of livestock.	8	32.0	8	32.0	4 16.0	5 20.0	- -	2.240			4	33.3	1	8.3	3 25.0	3 25.0	1 8.3	2.667	
20. Identifying breeds of livestock.	4	16.0	6	24.0	6 24.0	7 28.0	2 8.0	2.880			2	16.7	-	-	7 58.0	- -	3 25.0	3.167	

Question 2	Parents										N= 30	Mayorica									
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
2. Preparing livestock rations	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
3. Identifying digestive tract parts in livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
4. Animal vaccination	28	93.3	-	-	1	3.3	-	-	1	3.3	1.200	6	75.0	-	-	2	25.0	-	-	-	-	1.500
5. Detecting and determining diseases of livestock	28	93.3	1	3.3	1	3.3	-	-	-	-	1.100	6	75.0	1	12.5	1	12.5	-	-	-	-	1.375
6. Giving first aid to livestock	29	96.7	-	-	1	3.3	-	-	-	-	1.067	7	87.5	-	-	1	12.5	-	-	-	-	1.250
7. Developing a livestock health plan	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	29	96.7	-	-	-	-	-	-	1	3.3	1.133	8	100.0	-	-	-	-	-	-	-	-	1.000
9. Castrating various kinds of livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	6	75.0	1	12.5	1	12.5	-	-	-	-	1.375
10. Developing livestock production project	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
11. Identifying the different parts and cuts in livestock carcass	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
12. Keeping production records in livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
13. Developing inventory in various kinds of livestock enterprises	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
14. Calculating costs and benefits in livestock enterprises	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
15. Artificial insemination	30	100.0	-	-	-	-	-	-	-	-	1.000	7	87.5	-	-	1	12.5	-	-	-	-	1.250
16. Selecting livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	7	87.5	1	12.5	-	-	-	-	-	-	1.125
17. Recognizing pregnancy in livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
18. Identifying reproductive tract in livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
19. Identifying strus cycle in various species of livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000
20. Identifying breeds in livestock	30	100.0	-	-	-	-	-	-	-	-	1.000	8	100.0	-	-	-	-	-	-	-	-	1.000

Question 2	Teachers		N= 10		Mayorica		
Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.										
3	30.0	3	30.0	2	20.0	2	20.0	-	-	2.300
2. Preparing livestock rations.										
3	30.0	5	50.0	1	10.0	1	10.0	-	-	2.000
3. Identifying digestive tract part in livestock.										
3	30.0	2	20.0	1	10.0	3	30.0	1	10.0	2.700
4. Animal vaccination.										
1	10.0	1	10.0	1	10.0	4	40.0	3	30.0	3.700
5. Detecting and determining diseases of livestock.										
1	10.0	1	10.0	6	60.0	2	20.0	-	-	2.900
6. Giving first aid to livestock.										
1	10.0	1	10.0	3	30.0	3	30.0	2	20.0	3.400
7. Developing a livestock health plan.										
1	10.0	-	-	4	40.0	3	30.0	2	20.0	3.500
8. Identifying, preventing and controlling diseases produced by parasites. (Internal and External).										
-	-	2	20.0	2	20.0	5	50.0	1	10.0	3.500
9. Castrating various kinds of livestock.										
2	20.0	-	-	4	40.0	3	30.0	1	10.0	3.100
10. Developing a livestock porduction project.										
2	20.0	2	20.0	5	50.0	-	-	1	10.0	2.600
11. Identifying the different parts and cuts in livestock cascass.										
3	30.0	-	-	5	50.0	2	20.0	-	-	2.600
12. Keeping production records in livestock.										
4	40.0	2	20.0	2	20.0	1	10.0	1	10.0	2.300
13. Developing inventory in various kinds of livestock enterprises.										
3	30.0	4	40.0	1	10.0	2	20.0	-	-	2.200
14. Calculating costs and benefits in livestock enterprises.										
2	20.0	4	40.0	4	40.0	-	-	-	-	2.200
15. Artificial insemination.										
4	40.0	2	20.0	2	20.0	1	10.0	1	10.0	2.300
16. Selecting livestock.										
1	10.0	1	10.0	7	70.0	1	10.0	-	-	2.800
17. Recognizing preganacy in livestock.										
2	20.0	2	20.0	5	50.0	1	10.0	-	-	2.500
18. Identifying reproductive tract in livestock.										
2	20.0	3	30.0	1	10.0	2	20.0	2	20.0	2.900
19. Identifying strus cycle in various species of livestock.										
3	30.0	1	10.0	3	30.0	2	20.0	1	10.0	2.700
20. Identifying breeds of livestock.										
-	-	1	10.0	2	20.0	3	30.0	4	40.0	4.000

Question 2	Current Students										N= 19										Aregue
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	15	78.9	4	21.1	-	-	-	-	-	-	1.211	5	35.7	6	42.9	3	21.4	-	-	-	-	1.857
2. Preparing rations for livestock.	16	84.2	2	10.5	1	5.3	-	-	-	-	1.211	5	35.7	6	42.9	3	21.4	-	-	-	-	1.857
3. Identifying digestive tract parts in livestock.	10	52.6	7	36.8	1	5.3	-	-	1	5.3	1.684	-	-	7	50.0	6	42.9	1	7.1	-	-	2.571
4. Animal vaccination.	8	42.1	4	21.1	7	36.8	-	-	-	-	1.947	-	-	-	-	6	42.9	3	21.4	5	35.7	3.929
5. Detecting and determining diseases of livestock.	10	52.6	5	26.3	3	15.8	-	-	1	5.3	1.790	-	-	3	21.4	9	64.3	1	7.1	1	7.1	3.000
6. Giving first aid to livestock.	8	42.1	6	31.6	5	26.3	-	-	-	-	1.984	1	7.1	1	7.1	5	35.7	5	35.7	2	14.3	3.429
7. Developing a livestock health plan.	14	73.7	3	15.8	1	5.3	-	-	1	5.3	1.473	2	14.3	5	35.7	6	42.9	1	7.1	-	-	2.429
8. Identifying, preventing and controlling diseases produced by parasites. (Internal and External).	8	42.1	10	52.6	1	5.3	-	-	-	-	1.631	-	-	1	7.1	11	78.6	2	14.3	-	-	3.071
9. Castrating various kinds of livestock.	10	52.6	7	36.8	2	10.5	-	-	-	-	1.579	-	-	6	42.9	5	35.7	2	14.3	1	7.1	2.857
10. Developing a livestock project.	17	89.5	1	5.3	1	5.3	-	-	-	-	1.158	6	42.9	8	57.1	-	-	-	-	-	-	1.571
11. Identifying the different parts and cuts in livestock cascass.	9	47.4	6	31.6	2	10.5	-	-	-	-	1.842	2	14.3	7	50.0	5	35.7	-	-	-	-	2.214
12. Keeping production records in livestock.	18	94.7	1	5.3	-	-	-	-	-	-	1.052	4	28.6	6	42.9	3	21.4	-	-	-	-	2.071
13. Developing inventory in various kinds of livestock enterprises.	17	89.5	1	5.3	1	5.3	-	-	-	-	1.158	3	21.4	7	50.0	4	28.6	-	-	-	-	2.071
14. Calculating costs and benefits in livestock enterprises.	16	84.2	2	10.5	1	5.3	-	-	-	-	1.210	3	21.4	7	50.0	4	28.6	-	-	-	-	2.071
15. Artificial insemination.	14	73.7	5	26.3	-	-	-	-	-	-	1.263	6	42.9	3	21.4	5	35.7	-	-	-	-	1.929
16. Selecting livestock.	8	42.1	8	42.1	2	10.5	-	-	1	5.3	1.842	2	14.3	2	14.3	8	57.1	2	14.3	-	-	2.714
17. Recognizing pregnancy in livestock.	11	57.9	6	31.6	2	10.5	-	-	-	-	1.526	1	7.1	5	35.7	6	42.9	1	7.1	1	7.1	2.714
18. Identifying reproductive tract in livestock.	8	42.1	8	42.1	1	5.3	2	10.5	-	-	1.842	-	-	6	42.9	6	42.9	1	7.1	1	7.1	2.786
19. Identifying strus cycle in various species of livestock.	10	52.6	5	26.3	4	21.1	-	-	-	-	1.684	-	-	4	28.6	6	42.9	3	21.4	1	7.1	3.071
20. Identifying breeds of livestock.	5	26.3	6	31.6	6	31.6	1	5.3	1	5.3	2.316	-	-	-	-	5	35.7	8	57.1	1	7.1	3.714

Question 2	Parents									N= 10	Aregue	Question 2	Farmers									N=9	Aregue
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
2. Preparing livestock rations.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
3. Identifying digestive tract parts in livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
4. Animal vaccination.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
5. Detecting and determining diseases of livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
6. Giving first aid to livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
7. Developing a livestock health plan.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
8. Identifying, preventing and controlling diseases produced by parasites (internal and External).	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
9. Castrating various kinds of livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
10. Developing a livestock production project.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
11. Identifying the different parts and cuts in livestock cascass.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
12. Keeping production records in livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
13. Developing inventory in various kinds of livestock enterprises.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
14. Calculating costs and benefits in livestock enterprises.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
15. Artificial insemination.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	-	-	1	11.1	-	-	-	-	1.111
16. Selecting livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		7	77.8	1	11.1	1	11.1	-	-	-	-	1.333
17. Recognizing pregnancy in livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
18. Identifying reproductive tract in livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		9	100.0	-	-	-	-	-	-	-	-	1.000
19. Identifying strus cycle in various species of livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		8	88.9	1	11.1	-	-	-	-	-	-	1.111
20. Identifying breeds of livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		7	77.8	-	-	2	18.2	-	-	-	-	1.444

Question 2	Teachers		N=11		Aregue		
Never 1	Seldom 2	Sometimes 3	Frequently 4	Always 5			
N %	N %	N %	N %	N %			Mean
1. Selecting feeds for livestock							
6 54.5	2 18.2	2 18.2	- -	1 9.1			1.909
2. Preparing livestock rations							
7 63.6	1 9.1	3 27.3	- -	- -			1.636
3. Identifying digestive tract parts in livestock							
6 54.5	3 27.3	- -	1 9.1	1 9.1			1.909
4. Animal vaccination							
4 36.4	4 36.4	1 9.1	1 9.1	1 9.1			2.181
5. Detecting and determining diseases of livestock							
6 54.5	2 18.2	2 18.2	- -	1 9.1			1.909
6. Giving first aid to livestock							
4 36.4	5 45.5	- -	1 9.1	1 9.1			2.091
7. Developing a livestock health plan							
7 63.6	1 9.1	2 18.2	- -	1 9.1			1.818
8. Identifying,preventing and controlling diseases produced by parasites (Internal and External)							
5 45.5	4 36.4	- -	1 9.1	- -			1.727
9. Castrating various kinds of livestock							
6 54.5	3 27.3	- -	2 18.2	- -			1.818
10. Developing a livestock production project							
7 63.6	2 18.2	1 9.1	1 9.1	- -			1.727
11. Identifying the different parts and cuts in livestock carcass							
5 45.5	4 36.4	1 9.1	1 9.1	- -			1.818
12. Keeping production records in livestock							
8 72.7	2 18.2	- -	= -	1 9.1			1.545
13. Developing inventory in various kinds of livestock enterprises							
8 72.7	1 9.1	2 18.2	- -	- -			1.454
14. Calculating costs and benefits in livestock enterprises							
7 63.6	1 9.1	2 18.2	- -	1 9.1			1.818
15. Artificial insemination							
7 63.6	2 18.2	2 18.2	- -	- -			1.545
16. Selecting livestock							
7 63.6	2 18.2	2 18.2	- -	- -			1.545
17. Recognizing pregnancy in livestock							
7 63.6	3 27.3	- -	- -	1 9.1			1.636
18. Identifying reproductive tract in livestock							
4 36.4	3 27.3	2 18.2	1 9.1	1 9.1			2.272
19. Identifying strus cycle in various species of livestock							
7 63.6	2 18.2	- -	1 9.1	1 9.1			1.818
20. Identifying breeds in livestock							
5 45.5	1 9.1	2 18.2	2 18.2	1 9.1			2.364

Question 2	Current Students										Question 2	Graduates									
	N=35									Agua Blanca		N=13									Agua Blanca
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5			Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean	N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	19	54.3	9	25.7	4	11.4	3	8.6	-	-	1.730	6	46.2	2	15.4	4	30.8	1	7.7	-	-	2.000
2. Preparing livestock rations.	19	54.3	9	25.7	2	5.7	5	14.3	-	-	1.800	6	46.2	4	30.8	1	7.7	2	15.4	-	-	1.923
3. Identifying digestive tract parts in livestock	6	17.1	15	42.9	8	22.9	4	11.4	2	5.7	2.457	2	15.4	3	23.1	4	30.8	3	23.1	1	7.7	2.846
4. Animal vaccination.	2	5.7	-	-	5	14.3	19	54.3	9	25.7	3.943	1	7.7	1	7.7	4	30.8	1	7.7	6	46.2	3.769
5. Detecting and determining diseases of livestock	4	11.4	7	20.0	15	42.9	8	22.9	1	2.9	2.857	1	7.7	1	7.7	7	53.8	1	7.7	3	23.1	3.308
6. Giving first aid to livestock.	3	8.6	7	20.0	13	37.1	9	25.7	3	8.6	3.057	1	7.7	1	7.7	5	38.5	2	15.4	4	30.8	3.539
7. Developing a livestock health plan.	11	31.4	9	25.7	13	37.1	1	2.9	1	2.9	2.200	5	38.5	3	23.1	3	23.1	1	7.7	1	7.7	2.231
8. Identifying, preventing and controlling diseases produced by parasites. (Internal and External).	5	14.3	5	14.3	16	45.7	5	14.3	4	11.4	2.943	2	15.4	-	-	7	53.8	3	23.1	1	7.7	3.077
9. Castrating various kinds of livestock.	4	11.4	8	22.9	13	37.1	7	20.0	3	8.6	2.914	2	15.4	1	7.7	6	46.2	2	15.4	2	15.4	3.077
10. Developing a livestock production project.	20	57.1	9	25.7	3	8.6	1	2.9	2	5.7	1.730	7	53.8	5	38.5	1	7.7	-	-	-	-	1.539
11. Identifying the different parts and cuts in livestock cascass.	13	37.1	12	34.3	9	25.7	1	2.9	-	-	1.943	2	15.4	7	53.8	3	23.1	1	7.7	-	-	2.230
12. Keeping production records in livestock.	25	71.4	8	22.9	1	2.9	1	2.9	-	-	1.371	8	61.5	4	30.8	1	7.7	-	-	-	-	1.462
13. Developing inventory in various kinds of livestock enterprises.	21	60.0	9	25.7	5	14.3	-	-	-	-	1.543	7	53.8	3	23.1	3	23.1	-	-	-	-	1.692
14. Calculating costs and benefits in livestock enterprises.	19	54.3	13	37.1	2	5.7	1	2.9	-	-	1.571	7	53.8	3	23.1	2	15.4	1	7.7	-	-	1.769
15. Artificial insemination.	27	77.1	2	5.7	4	11.4	2	5.7	-	-	1.457	6	46.2	5	38.5	2	15.4	-	-	-	-	1.692
16. Selecting livestock.	9	25.7	10	28.6	8	22.9	6	17.1	2	5.7	2.485	1	7.7	8	61.5	2	23.1	1	7.7	-	-	2.307
17. Recognizing pregnancy in livestock.	10	28.6	7	20.0	10	28.6	4	11.4	4	11.4	2.571	1	7.7	6	46.2	2	15.4	-	-	4	30.8	3.000
18. Identifying reproductive tract in livestock.	8	22.9	11	31.4	12	34.3	4	11.4	-	-	2.343	4	30.8	-	-	7	53.8	1	7.7	1	7.7	2.615
19. Identifying strus cycle in various species of livestock.	4	11.4	11	31.4	11	31.4	8	22.9	1	2.9	2.743	1	7.7	2	15.4	6	46.2	2	15.4	2	15.4	3.385
20. Identifying breeds of livestock.	2	5.7	6	17.1	14	40.0	12	34.3	1	2.9	3.114	1	7.7	1	7.7	5	38.5	4	30.8	2	15.4	3.385

Question 2	Parents	N=10	Agua Blanca								Question 2	Farmers	N=6	Agua Blanca							
	Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5				Never 1		Seldom 2		Sometimes 3		Frequently 4		Always 5		
	N	%	N	%	N	%	N	%	N	%	Mean		N	%	N	%	N	%	N	%	N	%	Mean
1. Selecting feeds for livestock.	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
2. Preparing livestock rations	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
3. Identifying digestive tract parts in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
4. Animal vaccination	9	90.0	1	10.0	-	-	-	-	-	-	1.100		5	83.3	1	16.7	-	-	-	-	-	-	1.167
5. Detecting and determining diseases of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
6. Giving first aid to livestock	9	90.0	1	10.0	-	-	-	-	-	-	1.100		6	100.0	-	-	-	-	-	-	-	-	1.000
7. Developing a livestock health plan	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
8. Identifying, preventing and controlling diseases produced by parasites (Internal and External)	9	90.0	1	10.0	-	-	-	-	-	-	1.100		6	100.0	-	-	-	-	-	-	-	-	1.000
9. Castrating various kinds of livestock	9	90.0	1	10.0	-	-	-	-	-	-	1.100		5	83.3	1	16.7	-	-	-	-	-	-	1.167
10. Developing a livestock project	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
11. Identifying the different parts and cuts in livestock cascass	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
12. Keeping production records in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
13. Developing inventory in various kinds of livestock enterprises	10	100,0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
14. Calculating costs and benefits in livestock enterprises	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
15. Artificial insemination	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
16. Selecting livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		5	83.3	1	16.7	-	-	-	-	-	-	1.167
17. Recognizing pregnancy in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
18. Identifying reproductive trac in livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000
19. Identifying strus cycle in various species of livestock.	9	90.0	1	10.0	-	-	-	-	-	-	1.100		5	83.3	1	16.7	-	-	-	-	-	-	1.167
20. Identifying breeds of livestock	10	100.0	-	-	-	-	-	-	-	-	1.000		6	100.0	-	-	-	-	-	-	-	-	1.000

APPENDIX B

DATA COLLECTION INSTRUMENTS

PERCEPTIONS AND JUDGEMENTS REGARDING

ANIMAL SCIENCE CURRICULUM

Name_____ _____ School_____

What is your present status?

__Current Student

__Graduate

__Teacher

__Local School Administrators

__Regional Supervisor

__Farmer

__Parent of Vocational Agriculture Student

__Faculty of Agriculture at University Level

__National Supervisor

The enclosed questionnaire has the purpose of gathering information concerning the animal science curriculum in the high schools of the Central-Western region of Venezuela. Information will be utilized confidentially and strictly with research purposes.

Directions:

1. Read carefully each item listed.
2. The items listed represent a general standars and practices which indicate the level of animal science curriculum in the region.
3. Response the items or statements should be consistent with the scales presented.
4. Please be as honest as possible.

Thanks you for your cooperation and interest in this very valuable and important study.

PERCEPTIONS IN CURRICULUM PLANNING

How frequently have you been involved in deciding (Planning) of each of the current subjects in animal science should be taught at the vocational agricultural high school? Make your rating according to the following scale.

1	2	3	4	5
Never	Seldom	Sometimes	Frequently	Always

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS IN CURRICULUM IMPLEMENTATION

How frequently have you been involved in the implementation of each of the current subjects in animal science at the vocational agricultural high school? Make your rating according to the following scale.

1	2	3	4	5
Never	Seldom	Sometimes	Frequently	Always

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS ABOUT IMPORTANCE OF INVOLVEMENT

How important do you consider is your participation in planning and implementing the current subjects in animal science at the vocational agricultural high school? Make your judgement according to the following scale.

1	2	3	4	5
None	Little	Somewhat	Much	Excessive

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS RELATED KNOWLEDGE

Express your judgement as to how well each of the following items are now and/or previously have been acquired as Knowledge by the students attending to the vocational agricultural high school. Make your rating according to the following scale.

1	2	3	4	5
Low Mastery				High Mastery

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS RELATED TO SKILLS

Express your judgement as to how well each of the following items are now and/or previously have been acquired as Skills by the students attending to the vocational agricultural high school. Make your rating according to the following scale.

1 2 3 4 5

Low Mastery High Mastery

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS RELATED TO AFFECTIVE DOMAIN

How the following items are now and/or have affected student's interests, mood and general attitude, while performing the activities in practice (out of the Classroom, on the school farm, in home suorrounding or community). Make your rating according to the following scale.

-2	-1	0	1	2
Negative				Positive

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS OF STUDENT'S PERFORMANCE

How do you qualify the level of competence of the student on the job in each of the current subjects, following graduation from vocational agricultural high school? Make your rating in the following scale.

1 2 3 4 5

Low level of Competence High level of Competence

1. ___ Selecting feeds for livestock.
2. ___ Preparing livestock rations.
3. ___ Castrating various kinds of livestock.
4. ___ Animal Vaccination.
5. ___ Detecting and determining diseases of livestock.
6. ___ Giving first aid to livestock.
7. ___ Selecting livestock.
8. ___ Recognizing pregnancy in livestock.
9. ___ Calculating costs and benefits in a livestock enterprise.
10. ___ Identifying breeds of livestock.
11. ___ Identifying the different parts and cuts in livestock cascass.
12. ___ Keeping production records in livestock.
13. ___ Developing inventory in various kinds of livestock enterprises.
14. ___ Artificial insemination.
15. ___ Identifying digestive tracts parts in livestock.
16. ___ Developing a livestock health plan.
17. ___ Identifying, preventing and controling diseases produced by parasites (Internal and external).
18. ___ Identifying reproductive tract in livestock.
19. ___ Identifying strus cycle in various species of livestock.
20. ___ Developing a livestock production project.

PERCEPTIONS WITH REGARD TO SELECTED
ASPECTS OF CURRICULUM DEVELOPMENT

Please, make three suggestions related to the following items of development procedural change which you feel are appropriate for improving the level of participation by members of the community. These are directly related to the animal science curriculum of vocational agriculture.

A. Planning the Curriculum:

1. _____

2. _____

3. _____

B. Implementing the curriculum:

1. _____

2. _____

3. _____

C. Class activity (Theory and Practice):

1. _____

2. _____

3. _____

D. Others:

_____

_____

_____

E. Commentary:

_____

_____

PERCEPCIONES Y JUICIOS EN RELACION AL CURRICULUM
EN ZOOTECNIA (CIENCIA ANIMAL) EN LA REGION
CENTRO-OCCIDENTAL

Nombre _____ Escuela _____

Cual es su posicion actual?

__Estudiante Actual.

__Estudiante Graduado

__Profesor de Agropecuaria a Nivel Medio.

__Personal Directivo de la Escuela.

__Supervisor Nacional

__Supervisor Regional

__Profesor de Educacion Superior.

__Padres y/o Representates

__Productor.

El cuestionario anexo tiene como proposito recabar informacion relàcionada con los planes de estudios de Zootecnia de las escuelas agropecuarias de la Region Centro-Occidental. La informacion sera utilizada confidencialmente y con fines netamente de investigacion.

Instrucciones:

1. Lea cuidadosamente cada uno de los planteamientos.
2. Los planteamientos representan una vision general y practica que indican el nivel del curriculum (plan de estudios) en la region.
3. Las respuestas deben ser sonsistentes con las escalas presentadas.
4. Por favor, sea lo mas honesto posible al responder.

Gracias por su cooperacion e interes en este valioso e importante estudio.

1

PERCEPCIONES SOBRE PARTICIPACION EN PLANIFICACION.

Con qué frecuencia ha participado usted, para decidir si cada uno de los componentes siguientes, deben ser enseñados en Zootecnia (Ciencia Animal) en la escuela Técnica o Ciclo Diversificado Agropecuario a Nivel Medio? Haga su estimación de acuerdo a la escala siguiente.

1	2	3	4	5
Nunca	Rara vez	Algunas veces	Frecuentemente	Siempre

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera.
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganados y los cortes de las canales.
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo del ganado.
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado.
19. ____ Identificar el Celo (Calores) en varios tipos de ganado.
20. ____ Desarrollar proyectos de producción ganadera.

PERCEPCIONES EN LA IMPLEMENTACION (EJECUCION) DEL PLAN DE ESTUDIOS.

Con qué frecuencia ha participado usted, en la implementación (ejecución) de los componentes siguientes del plan de estudios en Zootecnia (Ciencia Animal) en la escuela Técnica o Ciclo Diversificado Agropecuario en Nivel Medio? Haga su estimación de acuerdo a la siguiente escala.

1	2	3	4	5
Nunca	Rara vez	Algunas veces	Frecuentemente	Siempre

1. _____ Seleccionar alimentos para el ganado
2. _____ Preparar raciones balanceadas para el ganado
3. _____ Castrar varios tipos de ganado (Capar)
4. _____ Vacunar ganado
5. _____ Determinar enfermedades en el ganado
6. _____ Proporcionar primeras ayudas a un ganado enfermo
7. _____ Seleccionar ganado
8. _____ Reconocer preñez en el ganado
9. _____ Calcular costos y beneficios en una empresa ganadera.
10. _____ Identificar razas de ganado
11. _____ Identificar las partes de varios tipos de ganados y los cortes de las canales.
12. _____ Llevar records de producción ganadera
13. _____ Desarrollar inventarios en empresas ganaderas
14. _____ Inseminación artificial del ganado
15. _____ Identificar las partes del sistema digestivo del ganado.
16. _____ Desarrollar un plan sanitario para el ganado
17. _____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. _____ Identificar las partes del aparato reproductivo del ganado
19. _____ Identificar el Celo (Calores) en varios tipos de ganado.
20. _____ Desarrollar proyectos de producción ganadera.

IMPORTANCIA DE PARTICIPACION

Qué importancia da usted, a su participación en la planificación y desarrollo de los componentes siguientes del plan de estudio en Zootecnia (Ciencia Animal) en la escuela Técnica o Ciclo Diversificado Agropecuario a Nivel Medio? Haga su apreciación de acuerdo a la siguiente escala.

1	2	3	4	5
Ninguna	Poca	Alguna	Mucha	Demasiada

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo - del ganado
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado
19. ____ Identificar el Celo (Calores) en varios tipos de ganado
20. ____ Desarrollar proyectos de producción ganadera

PERCEPCIONES SOBRE CONOCIMIENTOS ADQUIRIDOS

Exprese su opinión en relación al nivel de conocimientos (Teóricos) adquiridos en cada uno de los componentes siguientes del plan de estudios de Zootecnia -- (Ciencia Animal) por los estudiantes de la escuela Técnica o Ciclo Diversificado Agropecuario. Haga su estimación de acuerdo a la siguiente escala.

1	2	3	4	5
Bajo nivel de conocimientos				Alto nivel de conocimientos

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo del ganado
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado
19. ____ Identificar el Celo (Calores) en varios tipos de ganado
20. ____ Desarrollar proyectos de producción ganadera

PERCEPCIONES SOBRE HABILIDADES Y DESTREZAS ADQUIRIDAS.

Expresa su opinión en relación al nivel de habilidades y destrezas (Prácticas) adquiridas en cada uno de los componentes siguientes del plan de estudio de Zootecnia (Ciencia Animal) por los estudiantes de la escuela Técnica o Ciclo Diversificado Agropecuario. Hacer su estimación de acuerdo a la siguiente escala.

1 Bajo nivel de competencia — 2 — 3 — 4 — 5 Alto nivel de competencia

1. _____ Seleccionar alimentos para el ganado
2. _____ Preparar raciones balanceadas para el ganado
3. _____ Castrar varios tipos de ganado (Capar)
4. _____ Vacunar ganado
5. _____ Determinar enfermedades en el ganado
6. _____ Proporcionar primeras ayudas a un ganado enfermo
7. _____ Seleccionar ganado
8. _____ Reconocer preñez en el ganado
9. _____ Calcular costos y beneficios en una empresa ganadera
10. _____ Identificar razas de ganado
11. _____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. _____ Llevar records de producción ganadera
13. _____ Desarrollar inventarios en empresas ganaderas
14. _____ Inseminación artificial del ganado
15. _____ Identificar las partes del sistema digestivo del ganado
16. _____ Desarrollar un plan sanitario para el ganado
17. _____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. _____ Identificar las partes del aparato reproductivo del ganado
19. _____ Identificar el Celo (Calores) en varios tipos de ganado
20. _____ Desarrollar proyectos de producción ganadera

PERCEPCIONES SOBRE EL DOMINIO AFECTIVO

De qué manera piensa usted, que son o han sido afectados los intereses, el temperamento y actitudes en general del estudiante de Zootecnia (Ciencia Animal) a nivel medio, en el salón de clases (Teoría)? Haga su estimación en la escala siguiente.

-2	-1	0	1	2
Negativa				Positiva

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo del ganado
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado
19. ____ Identificar el Celo (Calores) en varios tipos de ganado
20. ____ Desarrollar proyectos de producción ganadera

PERCEPCIONES SOBRE EL DOMINIO AFECTIVO

De qué manera piensa usted, que son o han sido afectados los intereses, el temperamento y actitudes en general del estudiante de Zootecnia (Ciencia Animal) a nivel medio, en las actividades prácticas, (fuera del salón de clase, en la finca escolar, en la comunidad). Haga su estimación de acuerdo a la siguiente escala.

-2	-1	0	1	2
Negativa				Positiva

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo del ganado
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado
19. ____ Identificar el Celo (Calores) en varios tipos de ganado
20. ____ Desarrollar proyectos de producción ganadera

PERCEPCIONES SOBRE EL RENDIMIENTO DEL EGRESADO EN EL TRABAJO.

Cómo calificaría usted, el nivel de competencia del estudiante de Zootecnia en el trabajo, en cada uno de los componentes siguientes, después de haber egresado - de la escuela Técnica o Ciclo Diversificado Agropecuario. Haga su apreciación de acuerdo a la siguiente escala.

1	2	3	4	5
Bajo nivel de competencia				Alto nivel de competencia

1. ____ Seleccionar alimentos para el ganado
2. ____ Preparar raciones balanceadas para el ganado
3. ____ Castrar varios tipos de ganado (Capar)
4. ____ Vacunar ganado
5. ____ Determinar enfermedades en el ganado
6. ____ Proporcionar primeras ayudas a un ganado enfermo
7. ____ Seleccionar ganado
8. ____ Reconocer preñez en el ganado
9. ____ Calcular costos y beneficios en una empresa ganadera
10. ____ Identificar razas de ganado
11. ____ Identificar las partes de varios tipos de ganado y los cortes de las canales
12. ____ Llevar records de producción ganadera
13. ____ Desarrollar inventarios en empresas ganaderas
14. ____ Inseminación artificial del ganado
15. ____ Identificar las partes del sistema digestivo del ganado
16. ____ Desarrollar un plan sanitario para el ganado
17. ____ Identificar, prevenir y controlar enfermedades producidas por parásitos (internos y externos)
18. ____ Identificar las partes del aparato reproductivo del ganado
19. ____ Identificar el Celo (Calores) en varios tipos de ganado
20. ____ Desarrollar proyectos de producción ganadera

PERCEPCIONES DE CAMBIO.

En cada uno de los aspectos señalados, relacione - tres sugerencias que estime convenientes para mejorar - la participación de la comunidad en las decisiones relacionadas con el plan de estudios de Zootecnia (Ciencia Animal) en la escuela Técnica o Ciclo Diversificado Agropecuario.

A. Planificación del Pensum de Estudios (Programa)

1. _____
2. _____
3. _____

B. Implementación del Plan de Estudios:

1. _____
2. _____
3. _____

C. Actividades de clase dentro o fuera de la escuela:

1. _____
2. _____
3. _____

D. Otro (s):

_____

_____

_____

Comentarios:

_____

_____

_____

APPENDIX C

LETTERS

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education 74078
(405) 624-5129

December 31, 1981

Professor Francisco Ugel
Director Instituto Universitario Pedagogico Experimental
Avda Los Horcones
Edif Sector Oeste
Barquisimeto, Venezuela

Dear Professor Ugel:

I am pleased to send you a report on the progress of one of the Agricultural Education graduate students, Mr. Pastor Perez, who is pursuing a program of advanced studies at Oklahoma State University. Mr. Perez has completed over three-fourths of the course work listed on his official Plan of Study, and is preparing for the Comprehensive Qualifying Examinations, which will be administered January 7 and 8.

Pastor's committee has approved plans for his research program which will be used to meet thesis and dissertation requirements. This study, entitled, "An Analysis and Evaluation of the Animal Science Component of the Curriculum in Vocational Agricultural Education in the Central-Western Region of Venezuela" is, as the title indicates, an attempt to carefully examine the present Animal Science teaching plan and program in your country.

We are attempting to provide Mr. Perez with an opportunity to study and observe programs operating here in Oklahoma, particularly to discover just how the curriculum for Vocational Agriculture was constructed. He plans to return to Venezuela on January 9 to gather research data, and return to school prior to May 1 to resume his studies and complete the thesis.

Mr. Perez has proven to be a very capable student, as well as a very dependable person, whom, I feel, will make significant contributions to Vocational Agriculture and higher education throughout the years to come.

From a personal standpoint, I am pleased that Mr. Perez chose to come to Oklahoma State University for his advanced studies since this gave the Ag Education faculty an opportunity to become acquainted with a close friend.

Most Sincerely,

Robert R. Price
Professor Emeritus and
Committee Chairman

RRP/sjm

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education
(405) 624-5129

74078

Enero de 1982.

Ciudadana

Jefe de Región Educativa Centro-Occidental.
Barquisimeto - Edo. Lara.
Su despacho.

Muy estimada profesora:

Es el objetivo de la presente hacer de su conocimiento y para los fines consiguientes, que actualmente me encuentro en la etapa de realización de una investigación como requerimiento parcial para optar al título de Doctor en Educación Agropecuaria, en la Universidad del Estado de Oklahoma (Oklahoma State University), Estados Unidos.

La investigación se enmarca en la región Centro-Occidental y para ello han sido seleccionadas cuatro escuelas agropecuarias en Yaracuy, Falcón, Portuguesa y Lara.

Dicho análisis nos permitirá tener una idea más clara de algunos aspectos relativos al curriculum de la educación agrícola (Especialidad de Zootecnia) en la región.

Agradézcole a usted y al resto de la unidad que Ud. tan acertadamente dirige, cualquier tipo de colaboración que a bien tenga dispensar para lograr el éxito de esta empresa tan delicada e importante, la cual de antemano ofrezco como aporte a la fructífera labor que allí se lleva a cabo.

Sin otro particular al cual hacer referencia se despide de Ud.

Atte.

Su amigo y siempre servidor.

Prof. Pastor Alberto Pérez O.

Dr. Robert Price.
Profesor Emeritus.
Presi. Comité de Graduado.

Nota: Se anexa copia de la encuesta a administrar en las instituciones educativas.

VITA V

Pastor Alberto Perez-Olivares

Candidate for the Degree of

Doctor of Education

Thesis: PERCEPTIONS OF NINE SELECTED CITIZEN GROUPS REGARDING THE ANIMAL SCIENCE VOCATIONAL AGRICULTURE CURRICULUM IN THE CENTRAL-WESTERN REGION OF VENEZUELA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Barquisimeto, Venezuela, June 25, 1944, the first of fourteen brothers, son of Juan and Angelica Perez, and married to Daiglih Azuaje, with three daughters, Daiana, Ana, and Maria, and one son, Cesar Alberto.

Education: Attended elementary school at Grupo Escolar Virginia de Andrade, Barquisimeto 1952-60; received the diploma of "Bachiller" of science from Liceo Lisandro Alvarado, Barquisimeto, 1965; received the degree of Profesor de Educacion Secundaria from the Instituto Pedagogico Experimental, Lara, Venezuela, 1970; received the Master of Education degree in Agricultural Education from Texas A & M University, College Station, Texas, 1972; completed requirements for the Doctor of Education degree at Oklahoma State University, May, 1983.

Professional Experience: Professor at the Instituto Universitario Pedagogico Experimental de Barquisimeto, Venezuela, 1972-80, in the fields of swine production and cooperatives; Supervisor of Teaching Practicum 1974-79. Coordinator of Teaching Practicum 1974-79. Designed and implemented the swine production experimental project at the Instituto Universitario Pedagogico Experimental de Barquisimeto, 1972. Attended the Higher Education Latin American Seminar at Houston University, Houston, TX, 1971. Participated in the IV World

Conference in Animal Production, Buenos Aires, Argentina, 1977. Conducted a short course for Ministry of Education personnel in Teaching Methods in Animal Science held in Panama in 1977, sponsored by the Organization of American States.

Member of Phi Delta Kappa fraternity and Community Development Society.