THE PERCEPTIONS OF HIGH SCHOOL VOCATIONAL AGRICULTURE TEACHERS AND THEIR GRADUATES AS TO CURRICULAR NEEDS FOR VOCATIONAL AGRICULTURE IN AFGHANISTAN

By

MIR AQA

Bachelor of Science
University of Wyoming
Laramie, Wyoming
1958

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1964

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
May, 1978

THE PERCEPTIONS OF HIGH SCHOOL VOCATIONAL AGRICULTURE TEACHERS AND THEIR GRADUATES AS TO CURRICULAR NEEDS FOR VOCATIONAL AGRICULTURE IN AFGHANISTAN

Thesis Approved:

Robert Terry
Thesis Adviser

Jack Pritchard

Robert R Price

Dean of the Graduate College

ACKNOWLEDGMENT

The author wishes to express his appreciation to all VAHS teachers and graduates who participated in completing the questionnaires, to USAID and the government of Afghanistan who made this scholarship possible, to the staff of the College of Agriculture who made it possible for the author to use this scholarship, to all his family members for their sacrifices and encouragement, and to his various course instructors at Oklahoma State University whose help enabled him to fulfill the requirements of the program.

The author is especially thankful to his advisory committee members, Drs. Robert Price, Cecil Dugger, Deke Johnson and Jack Pritchard, for their advice and encouragement. Special indebtedness is expressed to Dr. Robert Terry, the author's advisory committee chairman, for his guidance, advice and encouragement throughout the graduate study and writing of this thesis; to Dr. James Key and Paul Czarniecki for their assistance in programming the data and to the people at the computer center for their assistance in punching the cards and providing computer assistance; and to Gerry Jones for typing the thesis.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

Afghanistan is a developing country with possibilities and growth potential for its agriculture. The two percent growth rate in its present population of 18 million means an additional 300,000 people to feed annually. Even though primitive, agricultural industry engages 85 percent of the population, leaving only 15 percent to be employed by other industries, most of whose raw materials are provided by agriculture.

Only 7.8 million hectares, or 12 percent of the total area of Afghanistan, are agricultural land. Of these, only 5.3 million hectares have the potential to be irrigated. Because of the lack of sufficient water, only 2.5 million hectares are irrigated annually. To boost the productivity of agriculture, among other things Afghanistan needs a qualified cadre of agricultural technicians and advisors.

Until recently, the agricultural technicians have been trained by one of the two vocational agricultural schools and the agricultural advisers have been trained by the only college of agriculture in the country.

Statement of Problem

Since the establishment of the new republic in 1973, Afghanistan has begun to put more emphasis on technical and vocational training programs. In 1973, a new vocational agriculture school was established in

Ferah province. In 1975, another agricultural school was established in Faryab province. That same year, the fifth vocational agriculture school was established in Herat province. In 1976, two additional vocational agriculture schools were established, one in Nangarhar and another in Balkh province. The establishment of all these vocational agriculture schools not only call for a strong teacher education program but would also make it necessary that curriculum for these schools be revised in the light of the new developments.

The curriculum for Afghanistan VAHS underwent a revision in 1955 and was printed in the local language in 1959. In this revision, only Afghan and American instructors were involved. There was no feedback from the graduates whose success and failure had partially been the result of the curriculum. In these recent years, there are a number of people in the field of agriculture who have had their training in different countries, thus bringing with them a variety of views and experiences which could be drawn upon for curriculum improvement. It is the intent of this study to get the views and reactions of those involved in one way or another in the use of VAHS curriculum. These views will hopefully be used in the revision of curriculum for Afghanistan VAHS.

Purpose

The primary purpose of this study was to determine the relative importance of various VAHS curriculum components and suggest possible changes based on views of respondents for improvement in the curriculum. A concurrent purpose would be to seek ways in which VAHS teachers could be upgraded. The accumulated data could serve as bases for curriculum improvement and further research in the area of curriculum.

Objectives

Specific objectives of this study are:

1. To determine the importance of components of VAHS curriculum as viewed by teachers and graduates.

2. To determine the extent of agreement on the importance of various curriculum items of VAHS subjects between teachers and their graduates.

3. To determine the areas of strength and weaknesses in the curriculum.

4. To suggest change and/or revisions in the curriculum.

Assumptions

The validity of data to be presented in this study are subject to certain assumptions that:

1. The instrument was reflective of curriculum being used in VAHS and was free from bias.

2. The instrument communicated the same information to all respondents.

3. The respondents were representative of their group.

4. The respondents answered each item of the questionnaire honestly and to the best of their knowledge.

5. The teacher, extension officials and the college students had a perception of what type of curriculum would be most effective in training technicians and preparing the graduates for college entrance.

Scope and Limitation

This study was limited to 33 VAHS teachers, some of whom were

already engaged in teaching and others had taught in VAHS before. Also, 62 extension officials working in five out of 28 provinces of Afghanistan and 87 graduates of VAHS who were presently college of agriculture students in their freshman to senior years in 1975-1976 were included.

Based on the author's teaching and administrative experience, both in VAHS and colleges of agriculture and his perception of educational needs of those schools and the use of information cited in the review of literature the contents of ten vocational agriculture courses were formulated into 123 broad and two-dimensional educational objectives. These objectives were then listed in the questionnaire to be evaluated for their importance by checking one of the five blanks in a scale of 1-5 which appeared under three specific measures, namely, extent of usefulness, applicability and effectiveness of teaching. The scale as coded was: (1) none, (2) little, (3) some, (4) much, (5) great deal.

Definition of Terms

Certain terms were used in this study in such a manner that they should be defined. These are as follows:

1. VAHS: Vocational Agriculture High Schools. These are the special high schools, grades 10-12, charged mainly with the training of agricultural technicians. Three of these schools were already established at the time of this study and four were being established.

2. VAHS Curriculum: The total course contents intended for students' learning in Vocational Agriculture in Afghanistan. It is a nationwide program consisting of ten Vocational Agricultural subjects. Each subject has a content of its own from which educational objectives have been derived for the purpose of this study. The objectives as

used here, are two-dimensional statement of aims to be accomplished by students under the supervision of the school. They include content as well as behavior to be changed.

3. Respondents: These were VAHS teachers and two groups of their graduates, namely, those who at the time of the study were college of agriculture students and agricultural extension officials.

4. Extent of Use: A measure in this study designed to determine the degree of utilization of the various VAHS curriculum objectives as seen by the respondents.

5. Applicability: A measure in this study indicating the extent to which an objective can be put to use under local situation as seen by respondents.

6. Teaching Effectiveness: A measure showing to what extent each objective would lend itself to be taught effectively as seen by respondents.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Curriculum as defined by Johnson (15) is all the planned learning experiences that students have under the auspices of the school. Johnson distinguishes curriculum from instructions by stating that curriculum consists of ordered, intended learning outcomes. Deciding what experiences produce these outcomes, he maintains, is instructional planning and providing those experiences is instruction. A dictionary definition of curriculum is the aggregate of courses of study given in a school, college or university.

Tyler (25) has suggested four fundamental questions that need to be answered in order to develop any curriculum and plan of instruction. The questions are:

1. What educational purposes should the school seek to obtain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?

The first question deals with the sources of selecting objectives. These are: studies of leqrners and contemporary life, suggestions from subject specialists, and the use of philosophy and psychology of learning.

Objectives as described by Mager (19) is a description of a performance you want learners to be able to exhibit before you consider them competent. Objectives, he maintains, are useful in providing a sound basis for the selection and design of instructional content and procedures, for evaluating the success of instruction and for organizing the student's own effort and activities for the accomplishment of the important instructional intent. If you know where you are going, he adds, you have a better chance of getting there.

Bloom (1) defines educational objectives as the explicit formulations of the ways in which the students are expected to be changed by the educative process. That is, the ways in which they will change in their thinking, their feelings and their actions.

Statement of Objectives

Tyler (25) suggests that the most useful form for stating objectives is to express them in terms which identifies both the kind of behavior to be developed in the student and the content or area of life in which this behavior is to operate.

Craig (8) offers the following general considerations for writing behavioral objectives: objectives should be clear and concise, realistic, attainable by instruction, capable of being measured, specific to the unit of study and be as many as are appropriate for the intended course. She classifies behavioral goals into six categories of: knowledge, understanding, skill, attitude, appreciation and interest. She summarizes the steps for writing a specific objective in asking the following questions: Who is to perform? What category of learning is involved? What is the terminal behavior? Under what conditions will it

be demonstrated? What degree or level of proficiency is to be met in order to succeed?

Rahmlow (22) suggests the steps for developing meaningful objectives to be as follows: drafting the objectives, writing a sample test item for the objectives, specifying the principal performance called for in the objectives, and specifying appropriate learning activities for the objectives.

Kapfer (16) divides the formulation of behavioral objectives into two stages; derivation, showing data sources for deriving objectives and specification. Under specification, he cites that Mager's three components should be included in the objectives. These are: (1) an action--what the student is supposed to be able to do when he is evaluated--which is communicated by means of action words: identify, write, list, contrast; (2) a context of signal--the conditions under which the student will be evaluated which might be employed or stated in a phrase frequently beginning with the word given; and (3) a criterion--the level of performance expected of the student--in which quality and/or quantity expectations are stated. He considers the action terms to be the most structural part of a behavioral objectives and suggests the use of six Sullivan terms in the writing of behavioral objectives. These terms are:

(1) Identify (equivalent terms and phrases--choose, compare, discriminate between or among, distinguish between or among, indicate, mark, match, select):
The learner indicates whether or not specified phenomena (objectives, events, or behaviors) are members of a class when the name of the class is given.

(2) Name (equivalent terms--designate, label, list, state):
The learner supplies the correct verbal label (orally or in writing) for one or more phenomena (objects, events, or behaviors) when the name is not given.

(3) Describe (equivalent terms and phrases--analyze, characterize, define, diagram, explain, replicate, report, represent, reproduce, tell how, tell what happens when):
The learner represents by words, (a) the structure and qualities of the objects, or (b) the processes and consequences of events and behaviors.

(4) Construct (equivalent terms--build, draw, formulate, make, prepare, synthesize):
The learner puts together the parts (objects, events, or behaviors) making up a concept. Thus, he builds or produces a product such as a drawing, article of clothing or furniture, a map, or an essay. The product itself is evaluated.

(5) Order (equivalent terms and phrases--arrange in a pattern, arrange in order, catalog, categorize, classify, list in order, outline, rank, relate, sequence):
The learner arranges two or more phenomena (objects, events, or behaviors) in a specified order. He may be given the names of the objects, events, or behaviors which he must order, he may be asked to name them himself as well as order them, or he may be asked to order them without having to provide verbal labels.

(6) Demonstrate (equivalent terms and phrases--perform an experiment, perform the steps, role play, show the procedure, show your work, simulate):
The learner performs a task according to pre-established or given specifications. The task may involve a number of behaviors including identifying, naming, describing, constructing and ordering (or combinations of these). The procedures the learner follows in performing the task are of greater concern than the product which may result from those procedures.

By using the above terms, variety and increasingly sophisticated levels of performance can be introduced into the lessons being prepared. Students who do not do well at such verbal behaviors as identifying, naming and describing can still have successful experiences by selecting lessons which focus on the potentially non-verbal behaviors of constructing, ordering and demonstrating (p. 153-154).

Gagne (12) has suggested a five component guide for the writing of performance objectives. These components are: (1) situation; (2) learned capability; (3) object; (4) action; and (5) tools or other constraints. Example: given a received letter inquiring about shipping an order (situation) generates (learned capability) a letter in reply

(object) by typing (action) using an electric typewriter, making one carbon of one page letter (tools and other constraints). Gagne offers nine verbs that describe human capabilities. The first five verbs describe: intellectual skills such as discrimination, concrete concept, defined concept, rule and higher order rule or problem-solving and the last four verbs describe: cognitive strategy, information motor skill and attitudes. These verbs are: discriminates, identifies, classifies, demonstrates, generates, originates, states, executes and chooses.

Other Views on Developing Objectives

Gilchrist (13) has expressed the humanistic views on educational objectives. His suggestion is to use the knowledge about human nature together with human values as the basis for developing educational goals and objectives. He maintains that educational technology and individual freedom and dignity are compatible when behavioral objectives are mutually agreed upon by teacher and learner. The classes of objectives described were policy objectives formed by legislature, school board, superintendent and community people, program objectives formed by administrators and educators, operational objectives formed by teachers and finally learner objectives formed by students in collaboration with their teacher.

Clay (7, p. 15) suggests some universal emotional needs that school can attempt to meet such as:

1. The need for belonging;
2. The need for achievement;
3. The need for economic security;
4. The need to be free from fear;

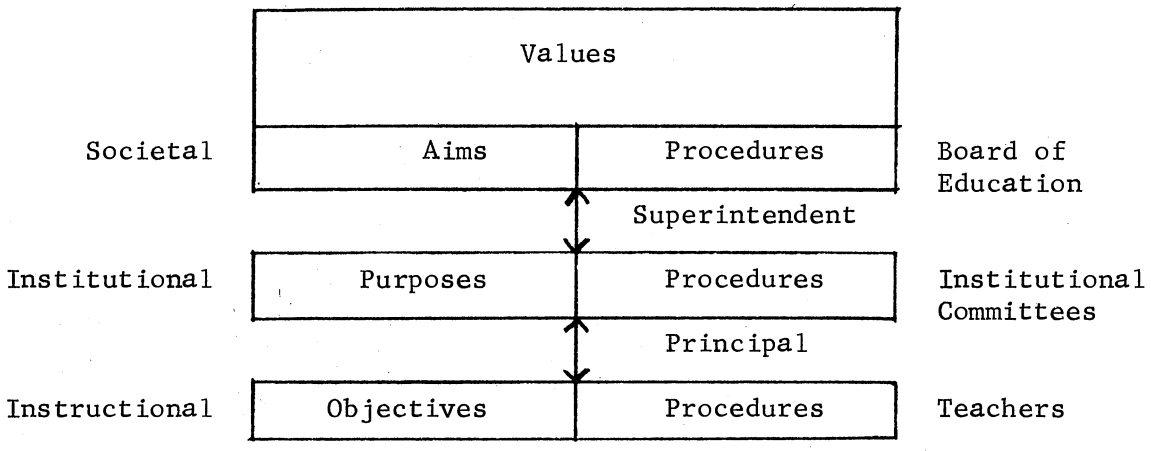
5. The need for love and affection;

6. The need to be free from guilt;

7. The need for self-respect;

8. The need for guiding purpose.

Myers (20, p. 11) presents a conceptual scheme in curricular and instruction as follows:



According to Myers, the board of education at societal level articulates the values (philosophy), develops the aims, and develops the procedures for the school district. The intermediate unit refines societal aims into institutional purposes and societal procedures into institutional procedures. Teachers at the instructional level make all the instructional decisions. They are guided by societal values and the institutional purposes and procedures in making these instructional decisions.

The Use of Texonomy of Educational Objectives as an Aid in Developing Objectives

As described by Krathwohl (17), the texonomy of educational objectives is divided into three domains: the cognitive, dealing with

objectives having to do with thinking, knowing and problem-solving; the affective, dealing with objectives having to do with attitudes, values, interests, appreciation and social and emotional adjustment; the psychomotor, dealing with objectives having to do with manual and motor skills. The texonomy deals only with the behavioral part of objectives. In explaining the difference between cognitive and affective domains, Krathwohl maintains that in the cognitive domain, we are concerned that the student shall be able to do a task when requested, while in the affective domain, we are more concerned that he does do it when it is appropriate after he has learned that he can do it.

Bloom (1) has classified a large number of cognitive behaviors into six levels. These could be summarized as follows:

1. Knowledge which deals basically with recall or recognition of information.
2. Comprehension is concerned with the ability to put into one's own words; to extrapolate; to think with understanding.
3. Application refers to the ability of the student to apply an idea to a new situation where the answer is not known. He can use the idea to think constructively about the phenomenon in question.
4. Analysis--the central idea here is concerned with the ability of the student to take a new problem area and systematically subdivide it into its component parts.
5. Synthesis relates to the ability of the student to construct a whole plan, consisting of several component parts. Essentially this involves using several complex ideas and putting them together into a workable whole.

6. Evaluation--the crux of this idea is judgment about the worthwhileness of an idea or plan. Criteria or standards must be developed to serve as a basis for making judgments.

These six classes present an array of behaviors ranging in complexity from knowledge as the simplest to evaluation as the most complex.

Krathwohl (17) has described five dimensions of affective behavior. These could be summarized as follows:

1. Receiving--this level of behavior suggests that the learner is first sensitized to the existence of the stimulus or thing.

2. Responding--this behavior indicates that the learner is committing himself in a small measure to the issue under question.

3. Valuing--in this instance, the behavior is seen as being appropriate or having worth, indicating that it is internalized or accepted.

4. Organization--when a student encounters situations in which more than one value is relevant, the several values must be organized into some sort of a system within the mind of the individual.

5. Characterization by a Value Complex--at this level, values already have a niche in the individual's value hierarchy, and they are organized into some kind of an internally consistent system. These values moreover have controlled the behavior of an individual for a sufficient time so that he has adapted to behaving this way. These levels of affective behavior can be related to specific values or attitudes in question when stipulating educational objectives (pp. 51-52).

The texonomy for psychomotor objectives have been developed by Simpson (23). She has defined psychomotor objectives as those which emphasize some muscular or motor skills, some manipulation of material and objects or some act which requires a neuromuscular coordination. Simpson has divided the psychomotor objectives in order from simplest to most complex into five levels. These are:

1. Perception--the process of becoming aware of objects, qualities or relations by way of sense organs. This level includes sensory stimulation, cue selection and translation.
2. Set--a preparatory adjustment or readiness for a particular kind of action or experience. Subcategories included in this level are mental, physical and emotional set.
3. Guided response--overt behavioral act of an individual under the guidance of the instructor. The two subcategories under this level are imitation and trial and error.
4. Mechanism--learned response has become habitual. Abilities are combined in action of a skill nature.
5. Complex overt response--at this level, high degree of skill has been attained. The act can be carried out smoothly and efficiently. The two subcategories in this level are resolution of uncertainty and automatic performance.

Summary

Curriculum consists of ordered intended learning outcomes. Objectives are the blueprint of student performance. The sources for developing objectives are teachers, students and society in general. As a guide for teacher's use, the statement of objectives including the content and behavior change may be all that is necessary. However, to state the objectives in terms that are helpful for teachers and students, they may have to be stated more specifically and include in addition to behavior and content, conditions under which the new behavior is to occur, the desired level of competency and the tools and other constraints that the students will be operating under.

CHAPTER III

METHOD AND PROCEDURES

Introduction

This chapter deals with a general plan for the study which includes development of instrument, administration of instrument, description of statistical method to be used and tabulation and analysis of data.

Development of Instrument

The content of ten vocational agriculture courses were taken from a copy of VAHS course syllabus, which was mailed to the author by an American advisor from college of agriculture in Afghanistan. These contents were then transformed into broad, two-dimensional educational objectives in the form such as suggested by Tyler (see Review of Literature). From these educational objectives, a questionnaire was developed to which the respondents were to react as to the importance of each objective to a five-point scale ranging from (1) none to (5) great deal. Each objective was to receive only three responses, one under each measure, namely, extent of usefulness, applicability and effectiveness of teaching (see appendix).

The questionnaire was then translated into Dari, a local language in Afghanistan. To insure a good return of questionnaire, the author's travel to Afghanistan was arranged by USAID in the summer of 1976. To make sure that the purpose of the project be clearly communicated, the

instrument was taken to the respondents and they were briefed about the purpose and limitations of the questionnaire and the importance of their honest participation in improving the curriculum for VAHS in Afghanistan.

Administering the Questionnaire

The college of agriculture students were the first group of respondents who completed the questionnaire in mid-summer, 1976. They were generally contacted in their classes. Next, the Baghlan teachers were contacted in one group in their school. Then the extension officials working in Kunduz and Baghlan provinces were contacted. They were generally located in their offices. Other VAHS teachers were located individually, some in Kalul and others in the provinces where the author travelled in search of extension officials. Kandahar province extension officials were the third group of officials located followed by Helmand, and, lastly, Herat province officials. The 182 questionnaires were complete at the end of August, 1976.

Tabulation and Analysis of Data

The data were transferred from the questionnaire to computer form to be keypunched and analyzed in the OSU computer center. The mean and frequency distribution relative to each objective were calculated for three respondent groups combined. This was done in accordance with each measure.

The mean difference of each group in relation to the objectives was computed through one-way analysis of variance.

Then each group was divided into two subgroups, teachers and

officials, according to years of service and students according to the school they had attended. The mean differences between each pair of subgroups were compared by the use of t-test. The detailed findings of data is presented in Chapter IV.

CHAPTER IV

PRESENTATION OF DATA

Introduction

The purpose of this study was to find out whether the users of VAHS curriculum are in agreement with the present curriculum. It was intended to find out the extent of difference, if any, in the perception of curriculum users about strength and weakness of present VAHS curriculum.

Treatment of Data

Treatment of data involved compiling of percentages, frequency distribution and mean scores to compare the importance that the entire group of respondents placed on various objectives under the measures: extent of usefulness, applicability and effectiveness of teaching.

Analysis of variance was used to show the significance of difference among the three groups of respondents' mean responses and the t-test was used to indicate the significance in mean difference between the selected groups of teachers and officials as to their years of service and of students as to their school origin.

Description of Respondents

As presented in Table I, the respondents consisted of 33 teachers and a group of 149 VAHS graduates. Of this latter group, 87 were

college of agriculture students at the time of the study and 62 were employed as extension officials. Most of the first group were presently teachers in one of the vocational agriculture schools while some were former VAHS teachers.

A higher number of teachers, 18, reported less than six years of service, while only 15 reported more than six years of service. Contrarily, a higher number of extension officials, 33, reported to have served more than six years while 29 reported their service to be less than six years.

Even though all of the 87 students who participated in this study were enrolled in college of agriculture, a higher number of them, 47, were graduates from Helmand VAHS while only 40 students were Baghlan VAHS graduates.

Emphasis Which Should Be Placed Upon Vocational and Non-Vocational Subjects

Table I was constructed to depict the amount of emphasis respondents felt certain vocational and non-vocational subjects should receive in the vocational agriculture high schools. It was found that all but one of the vocational subjects, agricultural engineering, were assigned higher mean ratings than were the non-vocational subjects. The mean responses for the vocational subjects all fell within the "slightly increase" category.

The highest rated non-vocational subjects were Math (3.58) and Study Hall (3.68), each of which were "slightly increase" recommendations. Respondents, on the average, felt that English, Chemistry, Physics, Physical Education and Pushto should continue to receive the

TABLE I

EMPHASIS WHICH SHOULD BE PLACED UPON VOCATIONAL AND NON-VOCATIONAL SUBJECTS IN AFGHANISTAN VOCATIONAL AGRICULTURE HIGH SCHOOLS AS PERCEIVED BY TEACHERS AND GRADUATES

Subjects	Heavily Decrease		Slightly Decrease		Leave Same		Slightly Increase		Heavily Increase		Mean	Rank
	N	%	N	%	N	%	N	%	N	%		
Agricultural Engineering	8	4.5	4	2.3	79	44.6	52	29.4	34	19.2	3.57	12
Animal Husbandry	13	7.3	2	1.1	71	39.9	52	29.2	40	22.5	3.58	10
Agronomy	2	1.1	1	0.6	58	32.6	56	31.5	60	33.7	3.99	4
Agriculture Extension	2	1.1	1	0.6	31	17.4	70	39.3	74	41.6	4.20	2
Botany	8	4.5	2	1.1	68	38.2	53	29.8	47	26.4	3.73	8
Entomology	4	2.2	3	1.7	44	24.6	84	46.9	44	24.6	3.90	5
Farm Management	2	1.1	3	1.7	65	36.5	64	36.0	44	24.7	3.82	7
Forestry	2	1.1	0	0.0	65	36.5	63	35.4	48	27.0	3.87	6
Horticulture	2	1.0	1	0.6	27	15.3	77	43.5	70	39.5	4.20	2
Plant Pathology	0	0.0	5	2.9	22	12.6	74	42.3	74	42.3	4.24	1
Chemistry	16	9.2	12	6.9	86	49.7	32	18.5	27	15.6	3.24	14
Dari	53	29.9	28	15.8	76	42.9	13	7.3	7	4.0	2.40	18
English	17	9.6	6	3.4	81	45.8	33	18.6	40	22.6	3.41	13
Math	8	4.5	5	2.8	77	43.5	51	28.8	36	20.3	3.58	11
Physics	21	12.0	9	5.1	88	50.3	36	20.6	21	12.0	3.15	15
Physical Education	18	10.3	21	12.0	106	60.6	19	10.9	11	6.3	2.91	16
Pushto	25	14.4	25	14.4	99	56.9	15	8.6	10	5.7	2.77	17
Study Hall	6	3.6	8	4.8	62	37.3	48	28.9	42	25.3	3.68	9

same emphasis, while Dari should receive "slightly decreased" emphasis.

On the basis of the order of magnitude of mean responses, the most important subjects were found to be Plant Protection (4.24), Agricultural Extension (4.20), Horticulture (4.20), Agronomy (3.99), and Entomology (3.90).

Perceptions of Extent of Use, Applicability and Teaching Effectiveness of Selected Agricultural Subjects' Objectives

Agricultural Engineering

Table II was constructed to allow a comparison of respondents' perceptions as to the extent of use, applicability and teaching effectiveness of the following 20 Agricultural Engineering objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of the importance of carpentry in agriculture;
2. Ability in making carpentry projects such as poultry feeders, etc.;
3. Appreciation of importance of metal work in agriculture;
4. Skill in repairing farm tools;
5. Skill in soldering;
6. Skill in land measurement;
7. Appreciation of leatherwork;
8. Skill in measuring metals;
9. Skill in cutting metal;
10. Skill in filing metal;

11. Skill in drilling and riveting metal;
12. Skill in painting wooden and metal projects;
13. Skill in sharpening tools;
14. Appreciation of the use of modern tools;
15. Understanding the operation of diesel engines;
16. Understanding the operation of gas engines;
17. Skill in assembling and disassembling farm machinery;
18. Understanding the operation of water pumps;
19. Skill in mixing and using concrete in building farm projects;
20. Skill in planning farm buildings.

Based on combined group response, only objectives 14 and 17 with 4.59 and 4.58 mean responses respectively were rated at the "great deal" usefulness level while objectives 7, 9, 11 and 12 were rated within the "some" usefulness limit due to the fact that all mean responses were in the 2.50 to 3.49 range. All remaining objectives rated a "much" level of usefulness.

The number of objectives rated to be "great deal" useful by each group of respondents were five for teachers (4, 6, 14, 15, 17), one for students (14), and two for officials (4 and 17). The objectives rated to be of "some" usefulness level were two for teachers (7, 12), four for students (7, 9, 11, 12) and four for officials (7, 10, 11, 12). All the remaining objectives fell within "much" usefulness level. No significantly different score appeared for any group under this first measure.

Under applicability, none of the objectives could be rated at "great deal" level response. Seven objectives (1, 3, 5, 6, 7, 8, 9) rated within the "some" level of applicability when the respective

TABLE II

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING AGRICULTURAL ENGINEERING OBJECTIVES AS PERCEIVED BY TEACHER, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	3.94	3.59	3.74	3.70	3.48	3.21	3.84*	3.48	4.13*	3.46	3.63	3.64
2	4.10	3.84	3.97	3.94	3.55	3.38	4.05*	3.66	3.91	3.63	3.77	3.74
3	3.65	3.57	3.73	3.64	3.00	3.27	3.78*	3.41	3.52	3.41	3.66	3.52
4	4.66	4.26	4.51	4.43	3.97	3.73	4.31*	3.99	3.39	4.08	4.22	4.19
5	3.60	3.89	3.63	3.74	3.38	3.68	3.49	3.57	3.97	3.84	3.59	3.78
6	4.59	4.20	4.46	4.37	4.32	3.82	4.23	4.06	4.31	4.13	4.33	4.24
7	2.88	2.92	3.07	2.97	2.56	2.89	2.98	2.85	2.88	2.87	2.95	2.89
8	4.06	3.86	4.06	3.98	3.87	3.50	4.10*	3.80	3.75	3.69	3.85	3.77
9	3.59	3.30	3.52	3.44	2.94	3.16	3.34	3.20	3.47	3.35	3.19	3.33
10	3.74	3.56	3.48	3.56	3.52	3.47	3.48	3.48	3.71	3.43	3.37	3.46
11	3.69	3.37	3.43	3.46	3.34	3.38	3.14	3.28	3.47	3.46	3.42	3.44
12	3.38	3.37	3.48	3.43	3.35	3.29	3.36	3.33	3.41	3.32	3.21	3.31
13	4.31	3.95	4.08	4.07	3.35	3.77	3.97	3.95	4.10	3.88	3.86	3.42
14	4.78	4.59	4.47	4.59	4.13	4.18	4.08	4.14	4.63	4.24	4.43	4.38
15	4.53	4.29	4.25	4.33	4.00	3.75	4.15	3.94	4.41	4.09	4.33	4.24
16	4.45	4.22	4.11	4.23	3.77	3.71	4.05	3.85	4.42	4.06	4.21	4.19
17	4.75	4.44	4.65	4.58	4.11	3.86	4.23	4.04	4.47	4.18	4.43	4.33
18	4.25	4.14	4.23	4.19	3.72	3.78	3.85	3.79	4.09	3.88	3.97	3.95
19	4.25	3.95	4.03	4.04	3.63	3.83	3.79	3.79	4.22	3.96	4.07	4.05
20	4.23	4.17	4.06	4.15	3.69	3.89	4.05	3.91	4.22	4.08	4.16	4.14

group's responses were combined. All remaining objectives rated at the "much" level of applicability. None of the objectives were rated at the "great deal" applicability level by any group. The number of objectives classified at the "some" level of applicability by each group were seven by teachers (1, 3, 5, 7, 9, 11, 12), eight by students (1, 2, 3, 7, 9, 10, 11, 12) and six by officials (5, 7, 9, 10, 11, 12). All the remaining objectives fell into the "much" level of applicability. Objectives (1, 2, 3, 4, 8) were scored at a significantly higher level by officials.

Under effectiveness of teaching, none of the combined group responses on any objective reached the "great deal" level of effectiveness. Five objectives (3, 9, 10, 11, 12) were rated at the "some" level of effectiveness, and the remaining were rated "much."

Among the individual groups of respondents, only objective 14 received a rating in the "great deal" level of effectiveness and this was by teachers. Objectives rated at the "some" level of effectiveness by teachers were numbers 7, 9, 11, 12; by students were 1, 3, 7, 9, 10, 11, 12; and by officials, 7, 9, 10, 11, 12. All the remaining objectives were assigned mean responses which placed them in the "much" category of effectiveness. Except for objective 1, which was rated significantly higher by teachers, there were no differences in the groups' rated objectives as to effectiveness of teaching.

Animal Husbandry

Table III was constructed to allow comparison of respondents' perceptions as to the extent of use, applicability and effectiveness of teaching for the following 25 Animal Husbandry objectives contained in

Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of the importance of livestock in agriculture;
2. Understanding the origin of local breeds of livestock;
3. Recognition of the uses of livestock products;
4. Understanding the animal need for housing;
5. Understanding the animal need for feed;
6. Understanding the methods of animal breeding;
7. Skill in animal identification;
8. Skill in selecting animals;
9. Skill in judging animals;
10. Skill in shearing sheep;
11. Skill in dehorning cattle;
12. Skill in telling animals' ages by their teeth;
13. Skill in determining weight of animals by formula;
14. Appreciation of history and importance of animal breeding;
15. Understanding the principles of genetics;
16. Understanding the times of breeding for farm animals;
17. Understanding the animal feeds;
18. Understanding the function of food in body growth;
19. Understanding the function of the animal digestive system;
20. Skill in calculating proper ration for animals;
21. Understanding milk and milk products;
22. Appreciation of animal hygiene;
23. Recognition of local diseases of farm animals;
24. Ability in prevention and treatment of animal diseases;
25. Skill in castrating farm animals.

TABLE III

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING ANIMAL HUSBANDRY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.72	4.69	4.56	4.65	4.34	4.22	4.32	4.28	4.66	4.53	4.58	4.57
2	4.16	4.15	4.17	4.17	3.50	3.90	3.93	3.84	4.19	4.08	4.33	4.19
3	4.59	4.54	4.41	4.51	3.91	4.90	4.10	4.11	4.47	4.42	4.32	4.35
4	4.56	4.61*	4.24	4.48	4.00	4.17	3.95	4.06	4.59	4.34	4.40	4.42
5	4.84	4.58	4.60	4.69	3.90	4.19	4.13	4.12	4.52	4.49	4.62	4.55
6	4.75	4.71	4.52	4.66	3.97	4.09	4.10	4.07	4.63	4.93	4.49	4.49
7	4.44	4.45	4.43	4.43	3.63	4.06	4.06	3.98	4.41	4.37	4.27	4.34
8	4.72	4.50	4.46	4.53	3.10	4.08	4.05	4.05	4.38	4.38	4.44	4.40
9	4.63	4.45	4.40	4.47	4.06	4.09	4.06	4.08	4.38	4.29	4.46	4.37
10	4.50	4.36	4.23	4.35	4.00	4.01	3.95	3.99	4.50	4.27	4.23	4.31
11	4.72	4.76	3.64	3.72	3.48	3.73	3.54	3.62	3.72	3.72	3.79	3.75
12	4.53*	4.48	4.08	4.35	4.06	4.10	4.03	4.08	4.25	4.30	4.13	4.24
13	4.09	4.04	3.93	4.02	3.56	3.42	3.57	3.51	4.28*	3.89	3.71	3.90
14	3.84	4.06	3.97	3.99	3.65	3.77	3.42	3.63	3.84	4.01	3.85	3.93
15	4.44	4.49	4.21	4.39	3.91	3.82	3.56	3.75	4.47*	4.32	4.00	4.23
16	4.81*	4.58	4.32	4.54	4.06	4.10	4.02	4.07	4.63	4.39	4.41	4.45
17	4.75	4.61	4.41	4.56	4.19	4.11	4.11	4.13	4.59	4.43	4.48	4.48
18	4.63	4.43	4.41	4.46	3.94	4.01	4.08	4.03	4.59	4.29	4.29	4.35
19	4.00	4.00	4.05	4.02	3.44	3.60	3.49	3.54	3.94	3.92	4.00	3.95
20	4.84*	4.52	4.21	4.48	4.06	3.95	3.84	3.94	4.69	4.27	4.21	4.33
21	4.52	4.46	4.29	4.42	4.03	4.17	3.97	4.08	4.52	4.35	4.19	4.33
22	4.68	4.67	4.58	4.64	3.87	4.16	3.98	4.05	4.61	4.44	4.51	4.50
23	4.53	4.60	4.56	4.58	3.91	4.10	4.13	4.08	4.56	4.41	4.41	4.44
24	4.55	4.61	4.53	4.58	3.90	4.01	4.25	4.08	4.57	4.35	4.47	4.44
25	4.38	4.39	4.31	4.37	4.06	4.12	4.02	4.08	4.32	4.21	4.22	4.24

Based on combined mean responses of 4.50 or above, ten objectives (1, 3, 5, 6, 8, 16, 17, 22, 23, 24) were categorized as being a "great deal" useful. All remaining fell within the "much" level of usefulness with mean responses between 3.50 and 4.49. Analyzed by individual groups, objectives that rated at the "great deal" level of usefulness by teachers were 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 16, 17, 18, 20, 21, 22, 23, and 24, with 12, 16 and 20 receiving significantly higher responses. Rated at the same level by students, mean responses were 1, 3, 4, 5, 6, 8, 11, 16, 17, 20, 22 and 23, with number 4 being rated significantly higher by this group. Objectives 1, 5, 6, 22, 23 and 24 were categorized at this level by officials with none being significantly different. All the remaining objectives fell within the "some" level of usefulness which meant that mean responses were within 2.50 to 3.49.

Mean responses to none of the objectives, when compared for applicability, reached the level of "great deal." All of the combined means fell within the "much" level of applicability. Objective 11 for teachers, objective 13 for students, and objective 19 for officials were rated at the level of "some" applicability, while all the remaining objectives fell within the "much" level of applicability. No mean response score of any one group, under applicability, differed significantly from that of other groups.

There were three objectives (1, 5, 22) under the combined mean column, that had mean responses translating to the "great deal" level of teaching effectiveness. All the remaining objectives fell within the "much" level of effectiveness. The number of objectives with means equivalent to the level of "great deal" by individual groups were, thirteen for teachers (1, 4, 5, 6, 10, 16, 17, 18, 20, 21, 22, 23 and 24)

with 13 and 15 being significantly higher rated; one for students; one, five and 22 for officials, none of these being of significant difference. All the remaining objectives fell within the "much" level of teaching effectiveness.

Agronomy

Nineteen Agronomy objectives are contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of importance of agriculture in the life of the people;
2. Recognition of branches of agriculture;
3. Understanding soil formation and the parent material of soils;
4. Understanding of soil profiles;
5. Understanding the soil's optimal condition for plant growth;
6. Understanding the use of different fertilizers in improving the soil;
7. Understanding the plant rotation in the improvement of soil;
8. Recognition of different field crops grown in Afghanistan;
9. Recognition of feed sources;
10. Ability in the proper use of seed;
11. Ability in irrigating the various field crops;
12. Ability in cultivation of various field crops;
13. Understanding the difference between row planting and broadcasting;
14. Understanding the techniques of plant improvement;
15. Ability in the use of hotbeds and coldframes in planting vegetables;

16. Ability in harvesting and storing vetetables;

17. Ability in protecting the vegetables from diseases and insects;

18. Ability in collecting vegetable seed;

19. Ability in testing seed for germination.

Table IV presents findings gathered on the perceptions of respondents as to the extent of use, applicability and effectiveness of these objectives. A glance at the combined mean response column under extent of usefulness reveals that nine objectives (1, 3, 5, 6, 7, 10, 11, 12, 17) could be rated at the "great deal" level with means ranging from 4.51 to 4.82 and the remaining objectives at the "much" level of usefulness with means of 4.28 to 4.46. The objectives reaching the level of "great deal" usefulness on the basis of mean responses by individual groups were 1, 5, 6, 7, 8, 10, 11, and 12 for teachers, with 2 and 7 being significant; for students, numbers 1, 3, 5, 6, 7, 10, 11 and 17, with no significant difference; and a total of 13 for officials (1, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17 and 18) with 12 and 13 being significant. All the remaining objectives earned a "much" level of usefulness response on the average.

None of the objectives when compared by combined means reached the "great deal" level in applicability. Only objective 6, which was rated at a significantly higher level by teachers was perceived as being applicable "great deal" by both teachers and officials. All the remaining objectives were found to have mean responses of 3.59 to 4.44 which placed them in the "much" level of applicability.

Three objectives (1, 6, 7) reached the "great deal" level under teaching effectiveness when judged by combined mean responses. The objectives reaching "great deal" level within individual group columns

TABLE IV

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING AGRONOMY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.78	4.76	4.67	4.74	4.19	4.32	4.34	4.31	4.59	4.52	4.48	4.52
2	4.47*	4.43	4.18	4.35	3.75	4.01	4.23	4.05	4.34	4.29	4.25	4.29
3	4.34	4.53	4.57	4.51	3.81	4.12	4.05	4.04	4.31	4.21	4.47	4.32
4	4.34	4.37	4.51	4.42	3.71	3.96	3.93	3.91	4.22	4.16	4.29	4.22
5	4.65	4.72	4.65	4.69	3.94	4.15	4.08	4.09	4.59	4.42	4.53	4.49
6	4.97	4.75	4.82	4.82	4.63*	4.19	4.56	4.41	4.75	4.47	4.66	4.59
7	4.94*	4.65	4.69	4.72	4.44	4.23	4.43	4.35	4.69	4.53	4.59	4.58
8	4.59	4.42	4.33	4.43	4.16	3.96	4.02	4.02	4.25	4.21	4.24	4.23
9	4.44	4.45	4.48	4.46	3.94	3.94	4.02	3.97	4.34	4.22	4.33	4.28
10	4.72	4.55	4.58	4.63	4.06	4.10	4.29	4.17	4.59	4.32	4.52	4.45
11	4.77	4.53	4.64	4.61	4.23	4.13	4.29	4.21	4.57	4.27	4.52	4.42
12	4.59	4.37	4.68*	4.52	4.25	4.09	4.38	4.23	4.41	4.22	4.49	4.36
13	4.22	4.33	4.59*	4.41	4.16	3.86	4.03	3.98	4.47	4.17	4.37	4.30
14	4.19	4.34	4.54	4.39	3.51	3.92	3.95	3.88	4.25	4.22	4.40	4.30
15	4.03	4.24	4.45	4.28	3.56	3.81	3.87	3.79	4.16	4.03	4.27	4.15
16	4.48	4.38	4.34	4.39	4.00	3.86	3.97	3.93	4.35	4.09	4.25	4.20
17	4.47	4.63	4.52	4.57	3.88	4.01	3.97	3.98	4.38	4.41	4.46	4.43
18	4.19	4.41	4.50	4.41	4.06	3.93	4.05	4.01	4.38	4.12	4.46*	4.30
19	4.28	4.45	4.39	4.40	3.84	3.85	3.06	3.93	4.22	4.13	4.48	4.27

were for teachers numbers 1, 5, 6, 7, 10 and 11; for officials numbers 5, 6, 7, 10 and 11, with 18 being significant for the officials. All the remaining objectives fell within the "much" level of teaching effectiveness.

Agricultural Extension

Respondents' perceptions as to the extent of use, applicability and teaching effectiveness of the seven Agricultural Extension objectives contained in Afghanistan's VAHS curriculums are compared in Table V. Each objective would enable the students to acquire:

1. Understanding the meaning of agriculture extension;
2. Recognition of ideal characteristics of an extension officer;
3. Ability in determining farmers' needs;
4. Familiarity with visual aids and their use;
5. Ability to control meetings;
6. Leadership ability;
7. Ability in evaluating extension program.

Under extent of use, objectives being placed in the "great deal" category of mean response level were: for all groups individually and combined, 1, 2 and 6; for the students, teachers and combined groups, 7; for students and combined groups, 3; and for student groups alone, 4. All the remaining objectives were rated to be of "much" usefulness. The differences in group ratings were not significant.

On applicability comparisons, objective 2 was rated significantly higher by the officials group. Only objectives 3 and 4 reached the "great deal" level of applicability in the view of teachers drawing respective mean responses of 4.69 and 4.56. All remaining objectives

TABLE V

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING AGRICULTURE EXTENSION OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.69	4.65	4.73	4.69	4.16	4.13	4.33	4.22	4.59	4.44	4.51	4.49
2	4.55	4.67	4.57	4.62	3.84	4.13	4.46*	4.20	4.41	4.38	4.47	4.42
3	4.47	4.55	4.49	4.52	4.69	4.03	4.21	4.03	4.38	4.36	4.44	4.39
4	4.28	4.53	4.27	4.40	4.56	3.66	3.83	3.71	4.13	4.31	4.32	4.27
5	4.41	4.48	4.46	4.46	3.53	3.73	3.98	3.79	4.22	4.24	4.43	4.30
6	4.59	4.52	4.65	4.58	3.75	3.88	4.22	3.98	4.34	4.27	4.66*	4.43
7	4.75	4.67	4.48	4.62	3.84	4.05	4.07	4.02	4.41	4.33	4.50	4.40

were rated at the "much" level of applicability due to their range of mean responses of 3.53 to 4.33.

With respect to teaching effectiveness, objective 1 as appraised by teachers and objectives 1, 6 and 7 as viewed by officials, rated at the "great deal" level of effectiveness. The higher rating of objective 6 by officials was significant. All remaining objectives, receiving mean responses of 4.13 to 4.47, were classified as having "much" effectiveness.

Botany

Table VI was developed to show a comparison of respondents' perceptions regarding extent of use, applicability and teaching effectiveness of the following 15 Botany objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of the importance of botany in agriculture;
2. Understanding the cell and its functions;
3. Understanding the different kinds of roots and their functions;
4. Understanding the tissue and its functions;
5. Understanding the different types of stems and their functions;
6. Understanding the different kinds of leaves and their functions;
7. Understanding the different types of flowers and their functions;
8. Understanding osmosis;
9. Understanding photosynthesis;
10. Understanding plant respiration;
11. Understanding the importance of chlorophyl in plants;

TABLE VI

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING BOTANY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.72	4.70	4.48	4.63	3.59	4.31	3.98	4.06	4.34	4.49	4.29	4.38
2	4.69*	4.21	4.19	4.30	3.59	3.91	3.17	3.60	4.38	4.09	3.98	4.10
3	4.58	4.49	4.35	4.47	3.58	3.95	3.59	3.76	4.29	4.21	4.24	4.23
4	4.56*	4.36	4.08	4.31	3.47	3.90*	3.13	3.55	4.31	4.11	3.92	4.08
5	4.53	4.37	4.26	4.37	3.84	3.95*	3.43	3.75	4.31	4.19	4.08	4.17
6	4.63*	4.37	4.16	4.35	3.69	4.03*	3.47	3.77	4.38	4.27	4.15	4.24
7	4.47	4.39	4.15	4.33	3.56	3.87	3.48	3.68	4.31	4.22	4.05	4.17
8	4.59	4.48	4.42	4.48	3.59	3.85	3.54	3.69	4.56	4.23	4.24	4.30
9	4.61*	4.44	4.13	4.37	3.42	3.83*	3.27	3.56	4.35	4.12	3.97	4.10
10	4.38	4.24	4.17	4.24	3.22	3.73*	3.27	3.47	4.28	3.97	4.05	4.06
11	4.63*	4.50	4.21	4.43	3.44	3.95	3.31	3.63	4.34	4.21	4.00	4.15
12	4.66	4.24	4.52	4.42	3.35	3.79	3.56	3.63	4.53*	4.05	4.31	4.24
13	4.09	4.10	4.11	4.11	2.97	3.39	3.36	3.31	4.10	3.86	4.00	3.96
14	4.31	4.31	4.35	4.33	3.56	3.76	3.87	3.77	4.28	4.16	4.30	4.24
15	4.45	4.50	4.44	4.48	3.65	3.88	3.98	3.88	4.10	4.25	4.37	4.27

12. Understanding the nitrogen cycle;

13. Understanding plant hormones;

14. Recognition of plant classification;

15. Understanding plants' parasites.

Under extent of use, only objective 1 with a mean response of 4.63 rated at the "great deal" level in the combined group column while the remaining objectives rated to the "much" level of usefulness with means of 4.11 to 4.48. The objectives rated to be a "great deal" useful by individual groups were ten for teachers (1, 2, 3, 4, 5, 6, 8, 9, 11 and 12) with 2, 4, 6, 9 and 11 being significantly different; three for students (1, 11, 15), and one for officials, number 12. All the remaining objectives fell within the "much" level of usefulness, due to receiving mean responses of 3.5 to 4.49.

None of the objectives reached the "great deal" level of applicability. Objective 13 with a 3.31 mean response was rated at the "some" level of applicability in the combined group, while the remaining objectives fell within the "much" level of applicability. None of the objectives in individual groups rated up to "great deal" level of applicability. Five objectives in the students column (4, 5, 6, 9, 10) were rated significantly higher. Objectives rating "some" applicability were five for teachers (9, 10, 11, 12, 13), one for students (13), and nine for officials (2, 4, 5, 6, 7, 9, 10, 11, 13). All the remaining objectives were within the "much" level of applicability.

Under effectiveness of teaching, only objective 12, given a 4.53 mean response by teachers, reached the "great deal" level of effectiveness and was a significantly different score. All the remaining objectives fell within the "much" level of effectiveness.

Entomology

Table VII was designed to illustrate the difference of respondents' perceptions as to the extent of use, applicability and teaching effectiveness of nine Entomology objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of history and importance of insects;
2. Recognition of insect mouth parts;
3. Recognition of internal parts of insects;
4. Recognition of external parts of insects;
5. Recognition of insect classification;
6. Ability to control destructive insects;
7. Ability to preserve useful insects;
8. Ability to prepare insecticides to control destructive insects;
9. Ability to apply insecticides to control destructive insects.

Under the extent of use, four objectives (6, 7, 8, 9) with respective mean scores of 4.71, 4.69, 4.68 and 4.64 were rated at the "great deal" level by the combined groups. All separate groups assigned a mean response of "great deal" also. All the remaining objectives were on the average of "much" usefulness, with none exhibiting a significant difference.

No objective reached the "great deal" level of applicability. The objectives rated "some" with means of 3.32 to 3.48 were number 3 for groups combined, students and officials, and numbers 2, 3 and 4 for teachers. All the remaining objectives reached the "much" level of applicability, none with significant difference.

Under effectiveness of teaching, the objectives that rated to the "great deal" level with means 4.52 and above were 6 and 8 for the

TABLE VII

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING ENTOMOLOGY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.22	4.35	4.27	4.30	3.68	3.80	3.90	3.81	4.16	4.18	4.29	4.21
2	4.06	3.99	3.95	4.00	3.47	3.58	3.57	3.56	4.03	3.90	3.97	3.95
3	4.19	3.72	3.97	3.90	3.25	3.23	3.47	3.32	4.03	3.60	4.06*	3.85
4	4.23	4.02	3.94	4.04	3.48	3.62	3.54	3.58	4.00	3.96	3.97	3.98
5	4.19	4.19	4.38	4.26	3.56	3.64	3.75	3.67	4.19	4.05	4.27	4.16
6	4.81	4.64	4.76	4.71	3.90	4.07	4.25	4.10	4.52	4.42	4.58	4.50
7	4.78	4.56	4.67	4.69	4.26	3.89	4.16	4.05	4.56	4.26	4.52	4.41
8	4.77	4.60	4.74	4.68	3.90	3.91	4.31	4.06	4.74*	4.24	4.59	4.64
9	4.78	4.57	4.66	4.64	4.13	4.19	4.44	4.27	4.65	4.36	4.56	4.49

combined groups and 6, 7, 8 and 9 for teachers and officials. Objective 8 was significantly higher rated by the teachers as was objective 3 by the officials. All the remaining objectives were receiving "much" teaching effectiveness.

Farm Management

Table VIII was constructed to help compare the perceptions of respondents in relation to extent of use, applicability and teaching effectiveness of the following six Farm Management objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of importance of economics in farm management;
2. Ability to select a farm;
3. Ability to manage a farm;
4. Ability to manage livestock;
5. Understanding the principles of supply and demand in buying and selling farm products;
6. Ability to weigh and measure.

Under extent of use, the objectives that rated to the "great deal" level with mean response of 4.51 or above, were 5 in all columns, 1 in teachers' and combined columns, and 2 and 3 in teachers' column. Objective 6 was rated significantly higher by teachers. All the remaining objectives fell within "much" level of usefulness.

Under applicability, all objectives, due to their mean responses being between 3.5 and 4.49, rated to the "much" level. Objective 6 was rated significantly higher by teachers.

Under effectiveness of teaching, only objective 5 was rated at the

TABLE VIII

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING FARM MANAGEMENT OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.63	4.46	4.48	4.51	3.63	3.96	4.11	3.96	4.41	4.29	4.35	4.34
2	4.56	4.40	4.39	4.43	3.84	4.00	4.16	4.04	4.38	4.29	4.31	4.31
3	4.53	4.36	4.40	4.40	3.84	3.82	4.16	3.95	4.41	4.10	4.23	4.20
4	4.47	4.36	4.31	4.36	3.91	4.00	4.33	4.10	4.22	4.18	4.34	4.25
5	4.78	4.54	4.60	4.61	4.09	4.01	4.34	4.15	4.69	4.31	4.49	4.45
6	4.44*	3.99	3.97	4.06	4.13*	3.61	3.83	3.77	4.28	3.85	3.88	3.44

level of "great deal" effectiveness by teachers with a mean response of 4.69. All remaining objectives fell within the "much" level of effectiveness.

Forestry

Table IX was developed to help compare the perceptions of respondents as to the extent of use, applicability and teaching effectiveness of the following nine Forestry objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Understanding the importance of forestry in Afghanistan;
2. Understanding the terms used in forestry;
3. Recognition of forest trees grown in Afghanistan;
4. Understanding forest protection methods;
5. Ability to plant and take care of a nursery;
6. Ability to fertilize and irrigate a nursery;
7. Ability to prune forest trees;
8. Ability to graft trees;
9. Ability to collect and store seeds from forest trees.

Objectives rated to the "great deal" level under extent of use, due to mean response of 4.5 or above were 1, 4, 5, and 8 for all groups, 6 for teachers, officials and groups combined, 7 for teachers group, which was also rated significantly higher and 3 for students group. The remaining objectives, being lower than 4.50 but not lower than 3.50, fell within "much" level of usefulness.

Objective 7 was rated significantly higher by teachers under applicability with a mean response of 4.25. Objective 9 with a mean response of 3.49 was rated at the "some" level of applicability by

TABLE IX

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING FORESTRY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.84	4.67	4.53	4.66	3.94	3.26	4.06	3.13	4.66	4.49	4.50	4.34
2	4.31	4.42	4.27	4.36	3.56	3.87	3.85	3.81	4.13	4.19	4.33	4.31
3	4.47	4.33	4.51	4.42	3.87	3.91	4.02	3.95	4.13	4.10	4.45	4.20
4	4.71	4.62	4.61	4.64	4.06	4.13	4.16	4.14	4.45	4.32	4.52	4.25
5	4.59	4.51	4.56	4.54	4.28	4.09	4.19	4.16	4.41	4.29	4.52	4.45
6	4.72	4.47	4.52	4.53	4.13	4.05	4.25	4.14	4.44	4.24	4.61*	4.41
7	4.63*	4.23	4.47	4.39	4.25*	3.69	4.08	3.94	4.50	3.92	4.42	4.21
8	4.72	4.65	4.68	4.67	4.25	4.16	4.27	4.22	4.72	4.44	4.48	4.23
9	4.09	4.15	4.30	4.20	3.71	3.49	3.84	3.67	3.97	3.86	4.27	4.23

students. All remaining objectives being within 3.5 - 4.49 mean response range rated to the "much" level of applicability.

The objectives that were rated at the "great deal" level of teaching effectiveness by different groups were 1, 7 and 8 by teachers, with means of 4.66, 4.50 and 4.72, respectively, and 1, 4, 5 and 6 by officials with means of 4.50, 4.52, 4.52 and 4.61, respectively. Objective 6 was rated significantly higher by officials. All the remaining objectives were rated to the "much" level of teaching effectiveness.

Horticulture

Table X was developed to give a comparison of respondents' perceptions as to the extent of use, applicability and teaching effectiveness of the following seven Horticulture objectives contained in Afghanistan's VAHS curriculum. Each objective would enable the students to acquire:

1. Appreciation of the importance of horticulture;
2. Understanding the history and branches of horticulture;
3. Understanding the reproduction of fruits, vegetables, and the ornamental plants;
4. Ability to plan and take care of a fruit, vegetable and ornamental garden;
5. Ability to graft fruit trees;
6. Ability to prune fruit trees;
7. Ability to fertilize and irrigate fruit, vegetable and ornamental gardens.

The objectives with mean responses of 4.50 or above that were rated at the "great deal" level of usefulness by different groups were:

TABLE X

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING HORTICULTURE OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.61	4.63	4.63	4.63	4.03	4.21	4.25	4.19	4.47	4.36	4.66	4.49
2	4.00	4.11	4.16	4.11	3.78	3.72	3.96	3.82	4.03	3.95	4.21	4.05
3	4.31	4.34	4.32	4.34	3.88	3.92	3.98	3.94	4.00	4.14	4.30	4.18
4	4.38	4.40	4.29	4.36	4.06	3.91	4.03	3.99	4.16	4.14	4.36	4.23
5	4.72	4.69	4.68	4.69	4.31	4.21	4.40	4.30	4.66	4.42	4.61	4.53
6	4.56	4.33	4.54	4.45	4.23	3.89	4.31*	4.11	4.34	4.21	4.57*	4.36
7	4.47	4.59	4.62	4.56	4.06	4.01	4.29	4.12	4.34	4.27	4.60	4.41

1 and 5 by all groups, 7 by students, officials and combined groups, and 6 by teachers and officials. All the remaining objectives, rating mean responses of 3.5 - 4.49, fell within the "much" level of usefulness. There were no significantly different scores under extent of use.

All objectives under applicability fell within the "much" level of mean responses with objective 6 being rated significantly higher by officials.

Under effectiveness of teaching, the objectives that were rated at the "great deal" level of responses by different groups were 5 by teachers, officials and combined groups, and 1, 5, 6 and 7 by officials, with 6 being significant. All the remaining objectives fell within the "much" level of teaching effectiveness.

Plant Pathology

Table XI permits a comparison of the perceptions of teachers, students and officials as to the extent of use, applicability and effectiveness of Plant Pathology educational objectives. Each objective would enable the students to acquire:

1. Appreciation of history and importance of plant protection;
2. Understanding the causes of diseases in plants;
3. Understanding the methods of prevention for plant diseases;
4. Recognition of chemicals used in prevention of plant diseases;
5. Ability to prepare chemicals for the prevention of plant diseases;
6. Ability to apply chemicals for the prevention of plant diseases.

Objectives 2, 3, 4, 5 and 6 were rated at the "great deal" level of usefulness by all groups with mean responses ranging between 4.53 - 4.81.

TABLE XI

EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING PLANT PATHOLOGY OBJECTIVES AS PERCEIVED BY TEACHERS, OFFICIALS AND STUDENTS COMPARED TO COMBINED GROUP OF RESPONDENTS

Objectives	Mean Response by Group											
	Extent of Use				Applicability				Effectiveness of Teaching			
	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.	Teach.	Stu.	Off.	Comb.
1	4.03	4.19	4.37	4.23	3.59	3.87	4.05	3.88	4.06	4.05	4.35	4.16
2	4.56	4.65	4.70	4.66	3.88	4.05	4.19	4.08	4.50	4.36	4.66	4.50
3	4.53	4.68	4.71	4.67	4.00	4.06	4.28	4.14	4.50	4.36	4.66	4.49
4	4.66	4.63	4.81	4.70	3.78	4.12	4.32	4.14	4.50	4.28	4.66*	4.46
5	4.56	4.56	4.62	4.59	3.84	3.91	4.24	4.02	4.57	4.18	4.65	4.42
6	4.65	4.64	4.73	4.68	4.10	4.09	4.24	4.16	4.58	4.32	4.73*	4.52

None of the scores were significantly different. The remaining objectives with mean responses ranging from 4.03 - 4.37 were rated at the "much" level of usefulness.

All objectives under applicability were rated at the "much" level with no significant difference among the scores.

Objectives reaching the level of "great deal" under effectiveness of teaching were two (2, 6) in combined groups; five (2, 3, 4, 5, 6) in teachers and officials groups with 4 and 6 being significantly different for the officials group. All the remaining objectives fell within the "much" level of teaching effectiveness.

Extent of Use, Applicability and Effectiveness of Teaching of VAHS Curricular Objectives as Perceived by Selected Groups

An objective of the study was to determine if there were differences between and among perceptions of the respondents as to the extent of use, applicability and effectiveness of teaching the curriculum objectives. To achieve this, three major comparison groups were identified along with two subgroups between each group of respondents and the mean responses of these were compared in Tables XII through XXI. The coding system used in these tables was as follows:

Teachers-----"Y" = young teachers (up to 6 years of service)
"O" = old teachers (more than 6 years of service)

School-------"H" = Helmand graduates
"B" = Baghlan graduates

Officials----"Y" = young officials (up to 6 years of service)
"O" = old officials (more than 6 years of service)

Agricultural Engineering

Table XII presents a summary of between and among group comparisons of the perceptions of selected groups as to the extent of use, applicability and teaching effectiveness of Agricultural Engineering objectives. Each objective would enable the students to acquire:

1. Appreciation of the importance of carpentry in agriculture;
2. Ability in making carpentry projects such as poultry feeders, etc.;
3. Appreciation of importance of metal work in agriculture;
4. Skill in repairing farm tools;
5. Skill in soldering;
6. Skill in land measurement;
7. Appreciation of leatherwork;
8. Skill in measuring metals;
9. Skill in cutting metal;
10. Skill in filing metal;
11. Skill in drilling and riveting metal;
12. Skill in painting wooden and metal projects;
13. Skill in sharpening tools;
14. Appreciation of the use of modern tools;
15. Understanding the operation of diesel engines;
16. Understanding the operation of gas engines;
17. Skill in assembling and disassembling farm machinery;
18. Understanding the operation of water pumps;
19. Skill in mixing and using concrete in building farm projects;
20. Skill in planning farm buildings.

TABLE XII

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF AGRICULTURAL ENGINEERING OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use				Applicability				Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	3.88	4.00	3.57	3.62	3.63	3.89	3.33	3.69	3.26	3.16	3.91	3.74
2	4.24	3.93	3.77	3.92	3.80	4.18	3.38	3.85	3.45	3.30	4.00	4.11
3	3.71	3.57	3.51	3.63	3.69	3.78	2.86	4.14	3.21	3.35	3.85	3.70
4	4.67	4.64	4.29	4.23	4.51	4.50	3.83	4.15	3.78	3.68	4.43	4.15
5	3.63	3.57	3.80	3.89	3.63	3.63	3.13	3.64	3.63	3.74	3.64	3.31
6	4.89	4.21	4.18	4.21	4.49	4.43	4.39	4.23	3.89	3.81	4.40	4.00
7	2.94	2.79	2.90	2.94	2.81	3.37	2.67	2.43	3.20*	2.54	2.87	3.13
8	4.39*	3.64	3.74	4.00	4.23	3.85	4.17	3.46	3.48	3.53	4.26	3.88
9	3.78	3.36	3.33	3.26	3.37	3.70	3.00	2.86	3.44	2.89	3.44	3.23
10	3.88	3.57	3.48	3.65	3.31	3.69	3.76	3.21	3.57	3.38	3.56	3.38
11	3.67	3.71	3.40	3.33	3.26	3.64	3.44	3.21	3.66	3.06	3.15	3.12
12	3.56	3.14	3.49	3.22	3.34	3.64	3.35	3.36	3.42	3.14	3.33	3.38
13	4.39	4.21	4.18*	3.68	4.09	4.07	4.22	4.54	3.93	3.59	4.36	3.18
14	4.83	4.71	4.61	4.56	4.32	4.64	4.17	4.08	4.15	4.22	4.03	4.14
15	4.44	4.64	4.39	4.18	4.15	4.36	3.94	4.08	4.00	3.47	4.13	4.18
16	4.29	4.64	4.30	4.14	3.97	4.29	3.76	3.77	3.85	3.56	4.12	3.96
17	4.72	4.74	4.48	4.51	4.61	4.70	4.19	4.00	3.95	3.75	4.12	4.37
18	3.94	4.64*	4.09	4.19	4.11	4.37	3.67	3.79	3.84	3.71	3.60	4.19*
19	4.28	4.21	3.87	4.05	3.83	4.30*	3.61	3.64	3.93	3.72	3.64	4.00
20	4.06	4.46	4.36	3.95	4.17	3.93	3.56	3.86	4.10*	3.56	4.03	4.08

Objectives	Teaching Effectiveness					
	Teachers		School		Officials	
	Y	O	H	B	Y	O
1	4.17	4.07	3.45	3.97	3.52	3.77
2	4.11	3.64	3.55	3.72	3.74	3.81
3	3.59	3.43	3.48	3.42	3.69	3.63
4	4.65	4.07	3.42	3.94	4.23	4.21
5	3.87	4.07	3.76	3.94	3.48	3.72
6	4.50	4.07	4.08	4.19	4.47	4.18
7	2.89	2.86	2.98	2.74	2.84	3.08
8	3.78	3.71	3.71	3.67	4.06	3.58
9	3.56	3.36	3.51	3.17	3.06	3.36
10	3.82	3.57	3.51	3.33	3.37	3.37
11	3.33	3.64	3.51	3.40	3.31	3.56
12	3.33	3.50	3.36	3.28	3.03	3.44
13	3.18	4.00	3.95	3.80	4.12	3.54
14	4.83	4.36	4.40	4.05	4.45	4.39
15	4.33	4.50	4.43*	3.70	4.30	4.36
16	4.35	4.50	4.19	3.92	4.23	4.18
17	4.61	4.29	4.32	4.03	4.42	4.43
18	3.83	4.43	3.88	3.88	3.83	4.15
19	4.22	4.21	3.95	3.97	3.91	4.26
20	4.00	4.50*	4.36	3.75	4.30	4.00

Regarding the extent of use, analysis of findings revealed that for objective 8, younger teachers' response was significantly higher than that of the older groups. For objective 18, the older teachers had a mean response level that was significantly higher than that of their counterparts. Other than these two objectives, the mean responses of the two age groups were not too different. Due to mean responses in excess of 4.50 assigned by both groups of teachers, objectives 4, 14 and 17 were rated at the "great deal" level. In addition, the younger group rated objective 6 at this level while the older group olaced objectives 15, 16 and 18 in this category. The lowest mean ratings on extent of use were 2.79, 3.36, 3.14, respectively, to objectives 7, 9 and 12 by old teachers and 2.94 by younger group to objective 7. All the remaining objectives were in the "some" category. Response levels by both groups to all other objectives were found to be "much." When compared by school attended, only one significantly different response was found and that was on objective 13 rated higher by Helmand graduates. The objectives rated to "great deal" level of usefulness by students were 14 by both groups and 17 by Baghlan graduates. The objectives that had received lower than 3.50 mean responses from students and had rated to the "some" level of usefulness were 7, 9, 11 and 12 by both groups and 10 by Helmand graduates. All remaining objectives rated to the "much" level of usefulness.

Responses of the young and old officials were basically the same on all but one of the objectives. The older officials' responses to objective 19 was significantly higher than that of the young group. Only two objectives, 4 and 17, drew "great deal" level response, with both groups responding in the "some" category on the average. The

objectives that were rated to the "some" level mean response due to means of lower than 3.50 were objective 7 for both groups and 9, 10, 11 and 12 for the younger officials. All the remaining objectives fell within "much" level.

A comparison of responses regarding applicability disclosed that the older teachers group responded at a higher level on nearly two-thirds of the objectives, but none of these differences were significant. There was one "great deal" response by older teachers to objective 13 and six "some" responses by the same group to objectives 7, 8, 9, 10, 11 and 12. While there were no "great deal" response by the young teacher group, there were eight "some" responses to objectives 1, 2, 3, 5, 7, 9, 11 and 12 by the same group. All other responses for teacher groups fell within "much" level of applicability.

In two instances, objectives 7 and 20, the Helmand graduates responded at a significantly higher level than did those from Baghlan. There were no "great deal" responses to any objectives by either group, nor were there any below the "some" category. The two groups responded in the "some" category to objectives 1, 2, 3, 7, 9 and 12. In addition, Helmand graduates responded at the "some" level to objective 8 while Baghlan graduates responded to that same level to objectives 10, 11 and 15, in which cases, Baghlan graduates responded at lower levels than did the other group. Except for objective 18 to which the older officials responded significantly higher than the young officials, the responses on the whole remained nearly the same for the two groups of officials. Only on objectives 5, 10 and 13 did the two groups' responses fall into different categories where the older officials had rated to the "some" level while both groups responded to the "some" level on

objectives 7, 9, 11 and 12. All the remaining responses fell into the "much" level of applicability.

Regarding the effectiveness of teaching, the findings reveal the young teachers to have slightly higher scores on 13 of 20 objectives, but none of the differences were significant. Only objective 20 was rated significantly higher by older teachers. The range of mean responses by young teachers across all objectives was 2.89 to 4.65, while for older teachers, it was 2.86 to 4.50. The Helmand graduates' scores were slightly higher on 14 of the 20 objectives, but significantly higher only on objective 15. The mean responses ranged from 2.98 to 4.43 for Helmand graduates and 2.74 to 4.19 for Baghlan graduates. The older officials scored slightly higher on 11 of the 20 objectives, but none of the mean responses to objectives were either significant or reached the "great deal" level. The responses ranged from 2.84 to 4.47 by young officials and 3.08 to 4.43 for old officials.

Animal Husbandry

Table XIII was developed to allow a comparison of the perception of selected groups with regard to the following Animal Husbandry objectives in the curriculum. Each objective would enable the students to acquire:

1. Appreciation of the importance of livestock in agriculture;
2. Understanding the origin of local breeds of livestock;
3. Recognition of the uses of livestock products;
4. Understanding the animal need for housing;
5. Understanding the animal need for feed;
6. Understanding the methods of animal breeding;

TABLE XIII

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF ANIMAL HUSBANDRY OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use				Applicability				Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.83	4.57	4.80	4.58	4.43	4.71	4.61	4.00	4.33	4.09	4.29	4.36	4.78	4.50	4.59	4.46	4.50	4.68
2	4.22	4.07	4.27	4.03	4.20	4.14	3.83	3.07	4.05	3.71	3.78	4.12	4.17	4.21	4.19	3.94	4.33	4.32
3	4.67	4.50	4.62	4.44	4.40	4.43	4.11	3.64	4.47*	3.86	4.06	4.14	4.61	4.29	4.35	4.28	4.20	4.46
4	4.67	4.43	4.82*	4.37	4.23	4.26	4.11	3.86	4.44*	3.83	3.97	3.93	4.72	4.43	4.37	4.29	4.41	4.41
5	5.00*	4.64	4.61	4.54	4.53	4.68	4.41*	3.29	4.35	4.00	4.06	4.23	4.76*	4.21	4.56	4.42	4.65	4.59
6	4.84	4.57	4.69	4.74	4.56	4.48	4.33*	3.50	4.07	4.11	4.14	4.04	4.83*	4.36	4.49	4.36	4.93	4.57
7	4.61	4.21	4.58	4.30	4.54	4.29	3.78	3.43	4.26	3.83	4.09	4.04	4.39	4.43	4.47	4.25	4.29	4.25
8	4.72	4.71	4.60	4.38	4.46	4.46	4.17	3.69	4.23	3.89	4.11	3.96	4.28	4.50	4.35	4.42	4.50	4.36
9	4.56	4.71	4.52	4.38	4.47	4.32	4.17	3.93	4.35*	3.78	4.06	4.07	4.39	4.36	4.37	4.19	4.54	4.36
10	4.72	4.21	4.44	4.26	4.24	4.22	4.17	3.79	4.16	3.83	4.00	3.89	4.50	4.50	4.38	4.14	4.15	4.33
11	4.83	3.57	3.93	3.58	3.62	3.67	3.65	3.29	3.88	3.56	3.55	3.54	3.72	3.71	3.90	3.47	3.59	4.04
12	4.33	4.79	4.51	4.44	4.26	3.85	4.29	3.79	4.14	4.06	4.21	3.82	4.22	4.29	4.35	4.25	4.24	4.00
13	4.17	4.00	3.93	4.15	3.91	3.96	3.44	3.71	3.44	3.41	3.50	3.67	4.17	4.43	3.98	3.78	3.66	3.78
14	3.94	3.71	4.18	3.93	3.94	4.00	3.53	3.79	3.88	3.65	3.47	3.37	3.78	3.93	4.09	3.92	3.94	3.74
15	4.61	4.21	4.52	4.46	4.14	4.30	4.17	3.57	3.90	3.73	3.74	3.31	4.61	4.29	4.37	4.27	4.21	3.73
16	4.78	4.86	4.59	4.56	4.23	4.44	4.22	3.86	4.29	3.84	4.04	3.93	4.72	4.50	4.47	4.31	4.47	4.33
17	4.83	4.64	4.71	4.49	4.46	4.36	4.17	4.21	4.29	3.92	4.34*	3.82	4.50	4.71	4.53	4.31	4.44	4.54
18	4.72	4.50	4.47	4.38	4.73	4.46	3.84	4.00	4.14	3.86	4.18	3.96	4.67	4.50	4.30	4.28	4.32	4.25
19	4.00	4.00	4.07	3.93	4.03	4.07	3.28	3.64	3.76	3.42	3.56	3.41	3.89	4.00	3.91	3.94	3.97	4.04
20	4.89	4.29	4.56	4.48	4.21	4.22	3.86	4.05	3.83	3.91	3.74	4.72	4.72	4.64	4.33	4.19	4.24	4.18
21	4.53	4.50	4.51	4.41	4.22	4.37	3.86	4.22	4.11	3.88	4.07	4.53	4.53	4.50	4.33	4.39	4.17	4.21
22	4.82	4.50	4.67	4.67	4.59	4.57	3.71	4.26	4.03	3.89	4.11	4.76	4.76	4.43	4.43	4.46	4.45	4.57
23	4.89*	4.07	4.63	4.58	4.54	4.57	3.64	4.20	4.00	4.17	4.17	4.07	4.61	4.50	4.40	4.42	4.36	4.46
24	4.88*	4.14	4.62	4.60	4.61	4.49	4.12	3.79	4.12	3.89	4.35	4.11	4.71	4.38	4.37	4.33	4.56	4.34
25	4.39	4.36	4.32	4.47	4.39	4.19	4.28	3.79	4.24	3.97	3.94	4.12	4.33	4.31	4.23	4.17	4.24	4.20

7. Skill in animal identification;
8. Skill in selecting animals;
9. Skill in judging animals;
10. Skill in shearing sheep;
11. Skill in dehorning cattle;
12. Skill in telling animals' ages by their teeth;
13. Skill in determining weight of animals by formula;
14. Appreciation of history and importance of animal breeding;
15. Understanding the principles of genetics;
16. Understanding the times of breeding for farm animals;
17. Understanding the animal feeds;
18. Understanding the function of food in body growth;
19. Understanding the function of the animal digestive system;
20. Skill in calculating proper ration for animals;
21. Understanding milk and milk products;
22. Appreciation of animal hygiene;
23. Recognition of local diseases of farm animals;
24. Ability in prevention and treatment of animal diseases;
25. Skill in castrating farm animals.

Regarding the extent of use the young teachers responded significantly higher compared to their older counterparts to objectives 5, 23 and 24. It is noteworthy that the lowest mean response to any objective was the 3.57 ("much") level by older teachers on number 11. To objective 5, all of the younger teachers responded "great deal." On 22 of the 25 objectives, younger teachers had a higher mean response.

When the responses were separated by graduate groups, it was found that Helmand graduates were significantly higher than Baghlan graduates

on objective 4. The overall levels of responses to these objectives were high with none falling below 3.58 which was still in the "much" category. Helmand graduates scored higher on 19 of 25 objectives. On 17 of these, responses ranged from 4.51 to 4.82, all of which were within the "great deal" limits.

The two official groups' responses were also high with the lowest being the 3.62 recorded for the younger group on objective 11. All objectives were at the "much" level and above. The older officials tended to respond slightly higher than the others; however, no significant differences were discovered. By comparison, these two groups' responses were much closer together than was found for the others on extent of use.

Under applicability, the younger teachers' mean responses were significantly higher than the older teachers on objectives 4 and 5. The Helmand graduates responded significantly higher than Baghlan graduates on objectives 3, 4 and 9. Younger officials' perception level was significantly above those of their older peers on objective 17.

The only "great deal" mean response from the teachers regarding applicability was the 4.61 for young teachers on objective 1. The remainder fell into either the "some" or much categories since they ranged from 3.28 to 4.41.

Neither the Helmand nor Baghlan graduates responded at the "great deal" level on applicability although Helmand graduates approached that on objectives 3, 4 and 9. Except for the responses of the Baghlan group on objectives 13 and 19 and the Helmand group on objective 13, all remaining responses were classified in the "much" range. In the former case, the average response was "some."

Inspection of findings from the official group discloses three "great deal" responses from the older officials on objectives 20, 21 and 22. Except for objective 14, to which both groups responded to "some" level, and objectives 15 and 19 to which older group of officials responded to the "some" level. All remaining objectives fell within the "much" category.

Under effectiveness of teaching, only younger teachers had scores significantly higher than the older teachers and these only on two objectives 5 and 6. There were no significant differences found between the graduates or the officials group. Calculated mean responses for the two teacher groups were quite close on nearly all the objectives. The range of means was from a low of 3.71 recorded from the older group to a high of 4.78 from the younger teachers.

Comparison between the two graduate groups revealed similar findings of closeness. In no case did the mean responses fall below the "much" level. The Helmand group responded higher on 19 of 25 objectives. The two official groups responded as "much" or greater in all instances, with most responses fitting into the former category. The lowest mean response was from the younger group on objective 11 (3.59) while the highest was calculated for the older officials on objective 1 (4.68).

Agronomy

Table XIV was designed to show the difference in perceptions of the selected groups as to the extent of use, applicability and teaching effectiveness of the following Agronomy objectives. Each objective would enable the students to acquire:

TABLE XIV

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF AGRONOMY OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use				Applicability				Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.83	4.71	4.87*	4.64	4.56	4.81	4.28	4.08	4.62*	3.97	4.37	4.30
2	4.56	4.36	4.57*	4.28	4.23	4.11	4.67	4.86	4.10	3.91	4.29	4.15
3	4.28	4.43	4.66	4.38	4.63	4.50	4.67	4.00	4.24	3.97	4.15	3.93
4	4.28	4.43	4.49	4.23	4.46	4.57	3.72	3.69	4.05	3.85	4.00	3.85
5	4.61	4.69	4.83	4.61	4.65	4.65	4.00	3.86	4.28	4.00	4.00	4.19
6	5.00	4.93	4.82	4.67	4.79	4.85	4.61	4.64	4.29	4.08	4.66	4.44
7	4.89	5.00	4.78	4.59	4.68	4.61	4.44	4.43	4.27	4.19	4.57	4.25
8	4.50	4.71	4.47	4.38	4.43	4.21	4.33	3.93	4.00	3.92	4.17	3.82
9	4.33	4.57	4.56	4.33	4.48	4.46	4.00	3.86	4.00	3.86	4.00	4.04
10	4.61	4.86	4.69	4.45	4.68	4.68	4.17	3.93	4.24	3.94	4.23	4.36
11	4.71	4.86	4.57	4.49	4.63	4.64	4.38	4.07	4.10	4.16	4.29	4.29
12	4.61	4.57	4.47	4.26	4.62	4.75	4.39	4.07	4.05	4.14	4.37	4.39
13	4.39	4.00	4.41	4.24	4.59	4.59	4.06	4.29	3.88	3.83	4.06	4.00
14	4.28	4.07	4.47	4.18	4.64	4.43	4.39	4.86	3.95	3.84	3.97	3.93
15	4.00	4.07	4.22	4.25	4.29	4.64	3.33	3.86	3.76	3.86	3.83	3.93
16	4.95	4.29	4.36	4.39	4.20	4.54	3.88	4.14	3.87	3.86	4.00	3.93
17	4.72	4.14	4.76	4.49	4.48	4.56	3.72	4.07	4.05	3.97	3.85	4.11
18	4.28	4.07	4.43	4.38	4.44	4.57	4.00	4.14	3.72	4.06	4.03	4.07
19	4.33	4.21	4.51	4.37	4.24	4.57	3.89	3.79	3.90	3.81	4.03	4.11

Objectives	Mean Responses by Comparison Group					
	Teaching Effectiveness					
	Teachers		School		Officials	
	Y	O	H	B	Y	O
1	4.67	4.50	4.74*	4.25	4.47	4.48
2	4.39	4.29	4.40	4.14	4.26	4.22
3	4.39	4.21	4.35	4.03	4.50	4.43
4	4.39	4.00	4.26	4.03	4.38	4.19
5	4.61	4.57	4.40	4.44	4.50	4.50
6	4.61	4.93	4.62	4.30	4.66	4.67
7	4.56	4.86	4.57	4.49	4.60	4.67
8	4.17	4.36	4.33	4.06	4.34	4.11
9	4.22	4.50	4.29	4.14	4.45	4.18
10	4.50	4.71	4.33	4.31	4.51	4.54
11	4.56	4.57	4.17	4.39	4.51	4.54
12	4.39	4.43	4.17	4.27	4.43	4.57
13	4.33	4.64	4.16	4.25	4.31	4.42
14	4.22	4.29	4.17	4.28	4.41	4.39
15	4.22	4.07	4.02	4.03	4.17	4.41
16	4.47	4.21	4.10	4.10	4.18	4.35
17	4.39	4.36	4.55	4.25	4.49	4.43
18	4.56	4.14	4.27	3.94	4.40	4.54
19	4.22	4.21	4.33	3.89	4.41	4.57

1. Appreciation of importance of agriculture in the life of the people;
2. Recognition of branches of agriculture;
3. Understanding soil formation and the parent material of soils;
4. Understanding of soil profiles;
5. Understanding the soil's optimal condition for plant growth;
6. Understanding the use of different fertilizers in improving the soil;
7. Understanding the plant rotation in the improvement of soil;
8. Recognition of different field crops grown in Afghanistan;
9. Recognition of feed sources;
10. Ability in the proper use of seed;
11. Ability in irrigating the various field crops;
12. Ability in cultivation of various field crops;
13. Understanding the difference between row planting and broadcasting;
14. Understanding the techniques of plant improvement;
15. Ability in the use of hotbeds and coldframes in planting vegetables;
16. Ability in harvesting and storing vegetables;
17. Ability in protecting the vegetables from diseases and insects;
18. Ability in collecting vegetable seed;
19. Ability in testing seed for germination.

The findings in regard to the extent of use do not reveal any significantly different mean responses either between young and old teachers or officials. The Helmand graduates were the only group that responded significantly higher compared to their Baghlan counterparts on

objectives 1 and 2. None of the responses from any group fell below a mean of 4.00. Most of the responses, especially of old officials, young teachers and Helmand graduates fell within the "great deal" level of usefulness. All of the young teachers on objective 6 and all of the old teachers on objective 7 responded to the "great deal" level.

Only Helmand graduates responded significantly higher under applicability and teaching effectiveness over their Baghlan peers on objective 1. Except for objective 15 (3.33) which was rated to the "some" level by young teachers, all other objectives fell within the "much" or greater levels of responses, mostly the former under applicability. The objectives that were rated within a higher category from their comparison groups were objective 1 for Helmand graduates, 3 for young teachers, 14 and 15 for old teachers, 5 and 6 for young officials. The remaining fell within the same category.

Under the effectiveness of teaching, only objective 1 was rated by younger teachers to a higher category compared to old teachers and objectives 9 and 13 were rated to a higher level by old teachers. All remaining objectives were rated within the same category by the two teacher groups. Helmand graduates rated objectives 1, 6, 7 and 17 in a higher category level than their Baghlan counterparts. The rest of the mean scores remained within similar categories of effectiveness. Older officials' means rated a category higher on objectives 12, 18 and 19 over younger officials while the young officials rated objective 3 over the older officials. All other scores remained within the same category levels for both official groups.

Agricultural Extension

Table XV was intended to expose the differences in selected groups' perceptions as to the extent of use, applicability and teaching effectiveness of the following Agricultural Extension objectives. Each objective would enable the students to acquire:

1. Understanding the meaning of agricultural extension;
2. Recognition of ideal characteristics of an extension officer;
3. Ability in determining farmers' needs;
4. Familiarity with visual aids and their use;
5. Ability to control meetings;
6. Leadership ability;
7. Ability in evaluating extension program.

In regard to extent of use, only Helmand graduates scored significantly higher over their Baghlan peers on objectives 3 and 6. The two graduate groups remained within the same level on other objectives. In comparing the teacher groups, young teachers were found to have responded a level higher to objective 3 while old teachers responded within a higher level to objective 5. On comparing the official groups, it is noted that older officials responded within a higher level to objectives 3 and 7 while the young officials responded to objective 5 on a higher level. Other objectives under extent of use were responded to at the same level.

Under applicability, the young teacher group scored significantly higher on objective 7 over the old teachers. Objectives 4, 6 and 7 were responded to at the "some" level by old teachers and objectives 4 and 5 were responded to at the "great deal" level by Helmand graduates while objective 2 was responded to at that level by old officials. All

TABLE XV

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF AGRICULTURAL EXTENSION OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use						Applicability					
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.83	4.50	4.72	4.56	2.68	4.79	4.11	4.21	4.18	4.09	4.91	4.32
2	4.53	4.57	4.69	4.64	4.50	4.67	3.72	4.00	4.15	4.09	4.14	4.52
3	4.50	4.43	4.71*	4.36	4.45	4.54	3.61	3.79	4.10	4.00	4.84	4.18
4	4.28	4.29	4.51	4.55	4.31	4.21	3.67	3.43	4.81	3.50	3.75	4.93
5	4.33	4.50	4.60	4.32	4.60	4.29	3.69	3.50	4.86	3.58	4.06	3.84
6	4.67	4.50	4.73*	4.27	4.60	4.70	4.11	3.29	4.07	3.67	4.12	4.33
7	4.72	4.79	4.76	4.57	4.41	4.57	4.28*	3.29	4.14	3.95	3.91	4.25

Objectives	Mean Responses by Comparison Group					
	Teaching Effectiveness					
	Teachers		School		Officials	
	Y	O	H	B	Y	O
1	4.47	4.21	4.46	4.41	4.43	4.61
2	4.33	4.50	4.45	4.31	4.52	4.41
3	4.39	4.36	4.53	4.16	4.51	4.36
4	4.11	4.14	4.35	4.26	4.44	4.18
5	4.28	4.14	4.30	4.17	4.44	4.91
6	4.39	4.29	4.37	4.14	4.69	4.63
7	4.61	4.14	4.44	4.19	4.44	4.57

remaining objectives fell within the "much" level of applicability. The objectives that were rated at a higher level of teaching effectiveness by various selected groups were 7 by young teachers, 2 by old teachers, 3 by Helmand graduates, 2 and 3 by young officials, 1 and 7 by old officials. All other objectives remained within the same level for all comparison groups.

Botany

Table XVI was developed to explain the difference in perception of the selected groups as to the extent of use, applicability and teaching effectiveness of the following Botany objectives. Each objective would enable the students to acquire:

1. Appreciation of the importance of botany in agriculture;
2. Understanding the cell and its functions;
3. Understanding the different kinds of roots and their functions;
4. Understanding the tissue and its functions;
5. Understanding the different types of stems and their functions;
6. Understanding the different kinds of leaves and their functions;
7. Understanding the different types of flowers and their functions;
8. Understanding osmosis;
9. Understanding photosynthesis;
10. Understanding plant respiration;
11. Understanding the importance of chlorophyl in plants;
12. Understanding the nitrogen cycle;
13. Understanding plant hormones;

TABLE XVI

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF BOTANY OBJECTIVES

Objectives	Mean Responses by Comparison Group															
	Extent of Use						Applicability						Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.78	4.64	4.82*	4.55	4.29	4.71*	3.50	3.71	4.38	4.22	3.88	4.11	4.44	4.21	4.63	4.33	4.34	4.21
2	4.78	4.57	4.40*	4.00	4.40*	3.93	3.39	3.86	4.39	3.89	3.21	3.11	4.50	4.21	4.16	4.00	4.20*	3.71
3	4.61	4.54	4.55	4.44	4.38	4.32	3.56	3.62	3.93	3.97	3.67	3.50	4.39	4.15	4.21	4.19	4.35	4.11
4	4.56	4.57	4.33	4.38	4.09	4.07	3.22	3.79	3.83	3.47	3.97	3.32	4.39	4.21	4.05	4.19	4.97	3.85
5	4.50	4.57	4.42	4.31	4.21	4.32	3.72	4.00	4.00	3.89	3.27	3.61	4.44	4.14	4.24	4.14	4.18	3.96
6	4.67	4.57	4.42	4.32	4.14	4.19	3.50	3.93	3.95	4.11	3.32	3.65	4.56	4.14	4.33	4.20	4.23	4.04
7	4.50	4.43	4.51	4.26	4.20	4.07	3.44	3.71	3.83	3.92	3.41	3.57	4.39	4.21	4.33	4.04	4.14	3.93
8	4.56	4.63	4.47	4.49	4.41	4.43	3.39	3.86	3.85	3.83	3.35	3.78	4.56	4.57	4.23	4.22	4.34	4.11
9	4.76	4.43	4.52	4.34	4.20	4.04	3.24	3.64	3.85	3.80	3.06	3.54	4.47	4.21	4.13	4.12	4.11	3.78
10	4.44	4.29	4.31	4.16	4.23	4.11	3.11	3.56	3.63	3.85	3.12	3.46	4.39	4.14	4.98	4.97	4.26*	3.79
11	4.67	4.57	4.51	4.49	4.35	4.04	3.17	3.79	3.88	4.03	3.04	3.59	4.44	4.21	4.16	4.26	4.23*	3.71
12	4.72	4.57	4.30	4.18	4.52	4.25	3.35	3.36	3.71	3.88	3.24	3.93	4.50	4.57	4.05	4.06	4.41	4.19
13	4.11	4.07	4.11	4.08	4.26	3.93	2.82	3.14	3.50	3.20	3.36	3.35	4.29	4.86	4.98	4.71	4.15	3.82
14	4.44	4.14	4.47	4.13	4.37	4.32	3.39	3.79	3.90	3.60	3.85	3.84	4.44	4.07	4.24	4.06	4.29	4.32
15	4.67	4.15	4.53	4.46	4.47	4.39	3.72	3.54	4.02	3.71	4.03	4.93	4.33	4.77*	4.31	4.18	4.44	4.29

14. Recognition of plant classification;

15. Understanding plants' parasites.

The young teachers responded within the "great deal" level of usefulness to 12 of the 15 objectives while the older teachers responded to the same level on 9 objectives. Even though the scores between the teacher groups were not significantly different, the younger teachers scored at a higher level over their peer group on objectives 7, 9 and 15. The Helmand graduates had two significant scores on objectives 1 and 2. They had higher levels of scores on objectives 3, 7, 9, 11 and 15 over their Baghlan counterparts. The younger officials had a significantly higher score on objective 2 and rated at a higher level on objective 12 over their older counterparts. The older officials had a significant score on objective 1. All other pairs of scores under extent of use were within the same level of response.

Neither a significant score nor a "great deal" response appeared under applicability. There were ten responses lower than means of 3.50 for each of the young teachers and young officials groups. There were two such responses for old teachers, four for old officials and one for Baghlan graduates. All other responses remained within the mean of 3.50 or above, amounting to the "much" level.

Under effectiveness of teaching, older teachers responded significantly higher on objective 15 while young officials responded significantly higher on objectives 2, 10 and 11 over their peer groups. The mean responses that reached "great deal" levels and changed one of the pairs of scores to a higher level were objectives 2 and 6 for young teachers, 13 and 15 for old teachers, 1 for Helmand graduates, 13 for Baghlan graduates, 4 for young officials. The rest of the scores

generally remained on the same level.

Entomology

Table XVII was intended to summarize the perception differences of the selected groups as to the extent of use, applicability and effectiveness of teaching for the following Entomology objectives. Each objective would enable the students to acquire:

1. Appreciation of history and importance of insects;
2. Recognition of insect mouth parts;
3. Recognition of internal parts of insects;
4. Recognition of external parts of insects;
5. Recognition of insect classification;
6. Ability to control destructive insects;
7. Ability to preserve useful insects;
8. Ability to prepare insecticides to control destructive insects;
9. Ability to apply insecticides to control destructive insects.

Under the extent of use, the young teachers and Helmand graduates responded significantly higher over their counterparts, the former to objectives 1, 6, 7 and 9, and the latter to objective 8. All of the young teachers responded "great deal" to objectives 6 and 7, while all of the groups responded "great deal" to objectives 6 and 9, and except Baghlan graduates, all groups responded "great deal" to objectives 7 and 8. The remaining responses were within the "much" category levels because they remained within 3.50 to 4.49 range.

There were no "great deal" response under applicability. Only objective 9 was rated significantly higher by the young teachers group. Other than nine scores which fell below the mean of 3.50 and were within

TABLE XVII

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF ENTOMOLOGY OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use				Applicability				Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.50*	3.86	4.47	4.22	4.26	4.29	3.88	3.43	3.85	3.74	3.91	3.89
2	4.33	3.71	4.05	3.92	3.94	3.96	3.67	3.21	3.50	3.68	3.48	4.67
3	4.39	3.93	3.70	3.74	3.97	3.96	3.28	3.21	3.12	3.37	3.38	3.58
4	4.47	3.93	4.09	3.95	3.97	3.89	3.59	3.56	3.55	3.71	3.48	3.61
5	4.33	4.00	4.20	4.18	4.47	4.26	3.61	3.50	3.74	3.53	3.73	3.78
6	5.00*	4.57	4.71	4.56	4.74	4.78	4.00	3.79	4.10	4.03	4.21	4.31
7	5.00*	4.50	4.70	4.41	4.65	4.70	4.41	4.07	4.10	3.64	4.06	4.29
8	4.94	4.57	4.80*	4.36	4.82	4.64	3.88	3.93	4.15	3.64	4.24	4.39
9	4.94*	4.57	4.61	4.51	4.62	4.71	4.39*	3.79	4.30	4.06	4.35	4.54

"some" level, all other scores remained within the "much" level. The "some" responses were on objective 3 by young teachers; 1, 2, and 3 by old teachers; 3 by Helmand and Baghlan graduates; and 2, 3, and 4 by young officials.

Only the young teachers responded significantly higher over the older group on objective 1. The only other scores that stood out at a higher level than that of the pair groups were on objectives 6 and 7 by young teachers and objectives 8 and 9 by old officials. All others remained within the same level as that of the other pair group.

Forestry

Table XVIII was developed to point out perception differences among the selected groups on extent of use, applicability and effectiveness of teaching for the following Forestry objectives. Each objective would enable the students to acquire:

1. Understanding the importance of forestry in Afghanistan;
2. Understanding the terms used in forestry;
3. Recognition of forest trees grown in Afghanistan;
4. Understanding forest protection methods;
5. Ability to plant and take care of a nursery;
6. Ability to fertilize and irrigate a nursery;
7. Ability to prune forest trees;
8. Ability to graft trees;
9. Ability to collect and store seeds from forest trees.

Under extent of use, there were two significant scores, one responded to objective 3 by old teachers, and the other responded to objective 5 by the old officials. All other scores fell within the "much"

TABLE XVIII

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF FORESTRY OBJECTIVES

Objectives	Mean Responses by Comparison Group															
	Extent of Use						Applicability						Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.78	4.93	4.80	4.51	4.94	4.54	3.67	3.57	4.17	3.17	4.18	3.95	4.67	4.64	4.58	4.37	4.49	4.52
2	4.33	4.24	4.51	4.32	4.36	4.43	4.00	3.64	4.18	3.81	3.73	4.00	4.28	3.93	4.19	4.20	4.29	4.38
3	4.22	4.79*	4.44	4.18	4.32	4.50	3.83	3.86	3.93	3.69	4.00	4.09	4.06	4.21	4.14	4.06	4.47	4.42
4	4.82	4.57	4.64	4.59	4.18	4.48	3.94	3.86	4.00	4.00	4.15	4.18	4.65	4.21	4.33	4.31	4.53	4.52
5	4.61	4.57	4.58	4.42	4.59	4.61*	4.11	4.07	4.10	3.91	4.15	4.25	4.39	4.43	4.30	4.29	4.58	4.44
6	4.78	4.64	4.57	4.35	4.00	3.93	4.00	4.29	3.71	3.50	4.20	4.32	4.39	4.50	4.33	4.12	4.69	4.52
7	4.56	4.71	4.39	4.05	4.56	4.50	3.89	4.00	4.24	4.29	4.09	4.07	4.39	4.64	3.95	3.88	4.52	4.30
8	4.78	4.64	4.69	4.59	4.26	4.29	3.56	3.57	3.83	3.92	4.43	4.07	4.72	4.71	4.63	4.20	4.49	4.48
9	4.00	4.21	4.29	4.00	4.45	4.57	3.59	4.21	4.05	3.75	3.76	3.93	3.94	4.00	3.95	3.75	4.27	4.26

or greater levels, mostly the latter. The responses ranged over all groups from 4.00 to 4.82, both recorded by the young teacher group.

Under applicability, there were neither significant scores nor "great deal" responses. Other than objective 1 (3.17) which was rated to "some" level by Baghlan graduates, all others fell within the "much" level.

There were no significant scores under effectiveness of teaching. Neither were there any responses lower than a mean of 3.74. The objectives that were rated at a higher level by one of the peer groups were 4 by young teachers, 6 and 7 by old teachers, 1 by old officials, 5 and 7 by young officials. All other responses fell within the same level of the other groups.

Farm Management

Table XIX was constructed to depict the perception differences between and among the selected groups as to the extent of use, applicability and teaching effectiveness of the following Farm Management objectives. Each objective would enable the students to acquire:

1. Appreciation of importance of economics in farm management;
2. Ability to select a farm;
3. Ability to manage a farm;
4. Ability to manage livestock;
5. Understanding the principles of supply and demand in buying and selling farm products;
6. Ability to weigh and measure.

Under extent of use, the only groups that responded significantly over their peer groups were young teachers to objective 4, and Helmand

TABLE XIX

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF FARM MANAGEMENT OBJECTIVES

Objectives	Mean Responses by Comparison Group															
	Extent of Use						Applicability						Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.61	4.64	4.62	4.28	4.44	4.54	3.67	3.57	4.17	4.71	4.09	4.15	4.39	4.43	4.36	4.20	4.31	4.40
2	4.50	4.64	4.57*	4.21	4.36	4.43	4.00	3.64	4.18	3.81	4.06	4.30	4.28	4.50	4.36	4.20	4.26	4.36
3	4.50	4.57	4.47	4.25	4.32	4.50	3.83	3.86	3.93	3.69	4.06	4.29	4.28	4.57	4.17	4.03	4.11	4.37
4	4.72*	4.14	4.46	4.26	4.18	4.48	3.94	3.86	4.00	4.00	4.22	4.46	4.39	4.00	4.17	4.20	4.26	4.44
5	4.94	4.57	4.73*	4.31	4.59	4.61	4.11	4.07	4.10	3.91	4.34	4.35	4.83	4.50	4.30	4.31	4.43	4.58
6	4.44	4.43	4.09	3.86	4.00	3.93	4.00	4.29	3.71	3.50	3.78	3.84	4.28	4.29	4.02	4.64	3.89	3.88

graduates to objectives 2 and 5. The scores that stood out at a higher category level were on objective 4 by young teachers, 1, 2 and 5 by Helmand graduates, 1 and 3 by old officials. All other scores remained within the same level as that of the other group.

Under applicability, only Baghlan graduates rated at a higher category level over their Helmand counterparts on objective 1. All other scores remained within the "much" level, ranging from 3.50 to 4.46.

With two exceptions, all scores under teaching effectiveness remained within the same level as that of the other group. Those standing out at a higher level were on objectives 2 and 3 by old teachers and 5 by young officials.

Horticulture

Table XX was designed to explain the differences in perceptions of the selected groups as to the extent of use, applicability and teaching effectiveness of the following Horticulture objectives. Each objective would enable the students to acquire:

1. Appreciation of the importance of horticulture;
2. Understanding the history and branches of horticulture;
3. Understanding the reproduction of fruits, vegetables, and the ornamental plants;
4. Ability to plan and take care of a fruit, vegetable and ornamental garden;
5. Ability to graft fruit trees;
6. Ability to prune fruit trees;
7. Ability to fertilize and irrigate fruit, vegetable and ornamental gardens.

TABLE XX

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF HORTICULTURE OBJECTIVES

Objectives	Mean Responses by Comparison Group															
	Extent of Use						Applicability						Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.65	4.57	4.73	4.51	4.44	4.81*	3.89	4.21	4.20	4.22	4.15	4.37	4.44	4.50	4.38	4.33	4.49	4.52
2	4.17	3.79	4.25	3.95	4.21	4.11	3.67	3.93	3.68	3.77	3.86	4.08	3.94	4.14	4.00	3.89	4.29	4.38
3	4.22	4.43	4.49	4.16	4.26	4.39	3.67	4.14	3.95	3.88	4.00	3.46	3.72	4.36	4.33	3.91	4.47	4.42
4	4.22	4.57	4.55	4.23	4.15	4.46	4.06	4.07	3.83	4.00	3.91	4.18	3.94	4.43	4.28	3.47	4.53	4.52
5	4.61	4.86	4.80	4.56	4.59	4.79	4.28	4.36	4.24	4.17	4.37	4.44	3.67	4.64	4.50	4.31	4.58	4.44
6	4.44	4.71	4.49	4.16	4.41	4.70	4.18	4.29	4.03	3.75	4.14	4.52	4.28	4.45	4.34	4.06	4.69	4.52
7	4.44	4.50	4.72*	4.32	4.54	4.71	4.11	4.00	4.03	4.00	4.26	4.32	4.33	4.36	4.30	4.23	4.52	4.30

The comparison of findings under extent of use reveals a significant score by Helmand graduates on objective 7 and one by old officials on objective 1. Other scores that were at a level higher than the contrasting pair for old teachers were objectives 4, 6 and 7, for Helmand graduates 4 and 7, for old officials 1 and 6. All other scores remained at the same level as that of their contrasting pairs.

Under applicability, except for objective 3 (3.46), rated at "some" level by old officials, all other objectives were rated within the "much" or higher levels with no significant scores for any group. The mean responses for "much" or higher levels ranged from the low of 3.67 by young teachers to a high of 4.52 (which was the only "great deal" scored under this measure) by old officials.

Even though there were no significant scores under effectiveness of teaching, there were some higher level responses for some groups that would point out differences in their perceptions compared to their peer groups. Objective 1 was rated at higher level by old teachers, 5 by Helmand graduates, 5 and 7 by young officials and 1 by old officials. All the remaining responses fell within the same level of the contrasting group. The range of responses were from 3.72 recorded by young teachers to 4.69 recorded by young officials.

Plant Pathology

Table XXI was designed to illustrate the differences in the perceptions of the selected groups as to the extent of use, applicability and teaching effectiveness of the following Plant Pathology objectives. Each objective would enable the students to acquire:

1. Appreciation of history and importance of plant protection;

TABLE XXI

COMPARISON OF SELECTED GROUPS' PERCEPTIONS OF EXTENT OF USE, APPLICABILITY AND EFFECTIVENESS OF TEACHING OF PLANT PATHOLOGY OBJECTIVES

Objectives	Mean Responses by Comparison Group											
	Extent of Use				Applicability				Teaching Effectiveness			
	Teachers		School		Officials		Teachers		School		Officials	
	Y	O	H	B	Y	O	Y	O	H	B	Y	O
1	4.28*3.71		4.22	4.16	4.37	4.39	3.33	3.93	3.73	4.03	4.25	3.82
2	4.67	4.43	4.71	4.58	4.71	4.68	3.83	3.93	4.07	4.03	4.12	4.29
3	4.78	4.21	4.78	4.59	4.71	4.71	4.94	4.07	4.05	4.09	4.29	4.26
4	4.61	4.71	4.71	4.53	4.80	4.82	3.71	3.86	4.24	3.97	4.26	4.39
5	4.63	4.46	4.70	4.41	4.64	4.60	3.94	3.69	4.05	3.75	4.21	4.29
6	4.60	4.73	4.75	4.51	4.73	4.74	4.25	3.93	4.07	4.12	4.26	4.25

Objectives	Mean Responses by Comparison Group					
	Teaching Effectiveness					
	Teachers		School		Officials	
	Y	O	H	B	Y	O
1	4.17	3.93	4.05	4.06	4.60	4.47
2	4.67	4.29	4.35	4.37	4.16	4.27
3	4.56	4.43	4.42	4.29	4.38	4.21
4	4.67	4.29	4.37	4.17	4.29	4.44
5	4.71	4.38	4.33	4.00	4.50	4.47
6	4.67	4.46	4.40	4.23	4.54	4.62

2. Understanding the causes of diseases in plants;
3. Understanding the methods of prevention for plant diseases;
4. Recognition of chemicals used in prevention of plant diseases;
5. Ability to prepare chemicals for the prevention of plant diseases;
6. Ability to apply chemicals for the prevention of plant diseases.

The analysis of findings under extent of use reveals a significant response by young teachers to objective 1 and a "great deal" response by all groups to objectives 4 and 5. All groups except old teachers responded "great deal" to objectives 2 and 3 and all groups except old teachers and Baghlan graduates responded the same to objective 5.

Under applicability, only objective 1 (3.33) by young teachers was rated to "some" level. All others remained within the "much" level. There were no significant responses under teaching effectiveness. The groups responding to higher levels than their peers were the young teachers who responded to objectives 2, 3, 4, 5 and 6, young officials to objectives 1 and 5. All other responses fell within the "much" level.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Purpose and Procedure

The purpose of this study was to evaluate the extent of usefulness, applicability and effectiveness of the Afghanistan VAHS curriculum through the involvement of some curriculum users in the evaluation process.

Among the 182 respondents who participated in this study were 33 VAHS teachers and 149 graduates. Of the VAHS graduates, 62 were Agricultural Extension officials and 87 College of Agriculture students. Thus, the three main groups of respondents were teachers, students and officials. In turn, these were further divided by years of service and school origin to provide six subgroups, namely, young and old teachers, young and old officials, Helmand graduate students and Baghlan graduate students for comparisons. The respondents were to check on a five-point scale how much emphasis should be placed on vocational and non-vocational subjects and to indicate how useful, applicable and effective the vocational agriculture curriculum was, as seen in the light of 123 objectives derived from ten vocational agriculture subjects.

Frequency distributions and mean responses were used to describe how much emphasis should be placed on each subject and on various

vocational agriculture objectives as suggested by combined mean responses of the whole group of respondents. The extent of difference between the three main groups' position was calculated on the basis of one-way analysis of variance. That of the selected subgroups was figured on the basis of t-test.

Findings

The bulk of the study effort dealt with an assessment of the curriculum objectives in terms of extent of use, applicability and effectiveness of teaching by the three main respondent groups and by the subgroups derived from these. Responses from the combined group suggested "slightly increased" emphasis on the non-vocational subjects of Math and Study Hall and on all of the vocational subjects. The remaining non-vocational subjects, according to combined mean responses, should continue to receive the "same" amount of emphasis as before. The mean responses for 18 subjects ranged from 2.40 for Dari to 4.24 for Plant Pathology. The lowest mean reported for Vocational Agriculture subjects was 3.57 recorded for Agricultural Engineering.

The findings of the study as derived from teachers, students and extension officials are summarized in Table XXII. This summary table reveals several important points including the finding that there were no responses lower than "some" level assigned by combined groups to any objectives of the ten vocational agriculture subjects. In fact, the only subject receiving "some" responses under all measures from the combined group was Agricultural Engineering. It is noteworthy that "great deal" responses were most frequent under extent of use and were nil under applicability. The "much" and "some" responses, on the other hand,

TABLE XXII

SUMMARY OF COMBINED MEAN RESPONSES OF THREE RESPONDENT GROUPS TO OBJECTIVES BY CURRICULUM AREA BY COMPARISON FACTOR

Area	Distribution of Objectives by Response Category								
	Extent of Use			Applicability			Effectiveness		
	Great Deal	Much	Some	Great Deal	Much	Some	Great Deal	Much	Some
Agricultural Engineering (20 objectives)	2	14	4	0	13	7	0	15	5
Animal Husbandry (25 objectives)	10	15	0	0	25	0	3	22	0
Agronomy (19 objectives)	9	10	0	0	19	0	3	16	0
Agriculture Extension (7 objectives)	5	2	0	0	7	0	0	7	0
Botany (15 objectives)	1	14	0	0	14	1	0	15	0
Entomology (9 objectives)	4	5	0	0	8	1	2	7	0
Farm Management (6 objectives)	2	4	0	0	6	0	0	6	0
Forestry (9 objectives)	5	4	0	0	9	0	0	9	0
Horticulture (7 objectives)	3	4	0	0	7	0	1	6	0
Plant Pathology (6 objectives)	5	1	0	0	6	0	2	4	0

were highest under applicability. Based on individual subjects, the "great deal" responses were highest in Plant Pathology, Agriculture Extension, Agronomy and Forestry, while such responses were lowest in Botany and Agricultural Engineering.

In an attempt to further summarize the study findings, Table XXIII was developed. The purpose of this effort was to illustrate which of the specific objectives within each curriculum area were rated at a significantly higher level on the average by the different groups included in the study and by the comparison factors of extent of use, applicability and effectiveness of teaching. The numbers contained in the columns refer to the objectives as listed under the respective curriculum areas as detailed in Chapter IV. Inspection of this table reveals that, considering the number of objectives and the number of comparisons of responses made, there were surprisingly few significantly different responses. Across the ten subject areas under extent of use, teachers came up with the majority of significant responses, especially in Botany and Animal Husbandry. Under applicability, officials' responses yielded significant scores in Agricultural Engineering as did students' in Botany. Under teaching effectiveness, officials had several significantly higher responses, especially in Plant Pathology.

On the whole, there did not seem to be a trend in the significant responses as far as the three main groups were concerned. However, on comparing between the selected groups, young teachers and Helmand graduates tended to have more significant responses than those of their counterparts. The young teachers yielded especially higher significant scores in Animal Husbandry and Entomology under extent of use, while Helmand graduates yielded significantly higher scores in a number of

TABLE XXIII

SUMMARY COMPARISON OF OBJECTIVES BY CURRICULUM AREA WHICH WERE RATED SIGNIFICANTLY HIGHER BY RESPONSE GROUPS

Comparison Factors and Groups	Objectives Rated Significantly Higher by Areas of Curriculum									
	Agri. Engr.	An. Hus.	Agron.	Ag. Ext.	Bot.	Ento.	Farm Mgmt.	For.	Hort.	Plant Path.
Extent of Use										
Teachers		12,16 20	2.7		2,4,6 9,11		6	7		
Students		4								
Officials			12,13							
Young teachers	8	5,23, 24				1,6, 7,9	4			1
Old teachers	18							3		
Helmand Grads	13	4	1,2	3,6	1,2	8	2,5		7	
Baghlan Grads										
Young officials					2					
Old officials	19				1			5	1	
Applicability										
Teachers			6				6	7		
Students					4,5,6 9,10					
Officials	1,2,3 4,8			2					6	
Young teachers		5,6		7		9				
Old teachers										
Helmand Grads	7,20		1							
Baghlan Grads										

TABLE XXIII (CONTINUED)

Comparison Factors and Groups	Objectives Rated Significantly Higher by Areas of Curriculum									
	Agri. Engr.	An. Hus.	Agron.	Ag. Ext.	Bot.	Ento.	Farm Mgmt.	For.	Hort.	Plant Path.
Young officials		17								
Old officials	18									
Teaching Effectiveness										
Teachers	1	13,15			12	8		7		
Students										
Officials			18	6		3		6	6	4,5,6
Young teachers		5,6				1				
Old teachers	20				15					
Helmand Grads	15		1							
Baghlan Grads										
Young officials					2,10, 11					
Old officials										

subjects, especially in Agricultural Extension and Farm Management under the same measure.

Conclusions

Based upon an analysis of the findings, the following conclusions can be drawn from this study:

1. Overall, the curriculum for Afghanistan VAHS as viewed by its users and those who had studied under it is satisfactory and is used extensively. The evaluators' responses indicated that the objectives were quite effectively taught to a high degree and that on the average they were applicable.

2. As indicated by the trend of the responses, the respondents, on the average, were in agreement as to the extent of usefulness, effectiveness, and applicability of various objectives for vocational agriculture subjects. That is, there were no major differences between or among groups.

3. Agricultural Engineering and Botany, though rated rather high, drew comparatively lower levels of responses than the other vocational agricultural subjects, thus appearing to be the only tow areas in the curriculum that would need strengthening.

Recommendations

It is recommended that:

1. The findings of this study should be communicated to the Ministry of Education so that they might be utilized in efforts to improve and expand the curriculum.

2. The findings be discussed in teacher workshops and seminars by

Ministry of Education personnel. Graduates should also be permitted to participate in these curriculum discussions.

3. Teacher in-service training sessions emphasizing the curriculum should be held in various vocational agriculture schools which would ultimately result in developing course outlines.

4. Additional similar studies should be initiated by staff of teacher education department of the college of agriculture. In these studies, more balanced groups of respondents may be attempted and the reasons for low responses on some objectives, especially those under applicability may further be explored. Views of respondents as to extent of emphasis on practical versus theoretical aspects of vocational subjects may be explored. Open-ended questionnaires may be used to investigate other alternatives for curriculum improvement.

SELECTED BIBLIOGRAPHY

(1) Bloom, Benjamin S. (Ed.) Texonomy of Educational Objectives, Handbook I: Cognitive Domain. New York: David McKay Company, Inc., 1956.

(2) Brown, Herman D. "An Investigation of Attitudes and Opinions Held by Teachers of Vocational Agriculture and Their Administrators Regarding Selected Areas of the Vocational Agriculture Program." (Unpublished Ed.D. dissertation, Oklahoma State University, 1965.)

(3) Bruton, John Crump. "The Effect of Vocational Agriculture Class Enrollment and Farm Experience of First Year Students Enrolled in Oklahoma Colleges of Agriculture." (Unpublished Ed.D. dissertation, Oklahoma State University, 1967.)

(4) Bunnag, P. "The Activities, Interests, and Problems of Teachers of Vocational Agriculture in Oklahoma and Thailand." (Unpublished M.S. Thesis, Agricultural Education Department, Oklahoma State University, 1961.)

(5) Burns, Richard W. and Gary D. Brooks. (Eds.) Curriculum Design in a Changing Society. New Jersey: Education Technology Publications, 1970.

(6) Coleman, James V. "Determining Parent's Concept of the Degree of Importance of Competencies and Understandings Which Should Be Taught in Farm Mechanics in Vocational Agriculture in the Wynnewood High School." (Unpublished M.S. Thesis, Agricultural Educa;tion Department, Oklahoma State University, 1962.)

(7) Clay, Donald F. Curriculum: Design for Learning. Indianapolis: Babbs-Merrill Co., Inc., 1966.

(8) Craig, Mary B. "Writing Objectives for Programmed Instruction--or Any Instruction." Behavioral Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

(9) Devaughan, A. F. "Competencies Needed by Vocational and Technical Education Teachers as Rated by Selected Groups." (Unpublished Ed.D. dissertation, Oklahoma State University, 1974.)

(10) Doll, Donald C. Curriculum Improvement: Decision-Making Process. Boston: Allyn & Bacon, 1964.

(11) Dye, Eddie Lynn. "An Analysis of Factors Associated with the Quality, Nature, and Extent of Farm Mechanics Experiences Received by Student Teachers of Vocational Agriculture." (Unpublished M.S. Thesis, Agricultural Education Department, Oklahoma State University, 1961.)

(12) Gagne, Robert M. and Leslie J. Briggs. Principles of Instruction Design. New York: Holt, Rinehart and Winston, Inc., 1974.

(13) Gilchrist, Robert S. and Bernice R. Roberts. Curriculum Development: A Humanized System Approach. Belmont, California: Lear Siegler, Inc., Fearon Publishers, 1974.

(14) Holley, Calvin W. "Perception of the Duties of Vocational Agriculture Teachers by Student Teachers Before and After Student Teaching as Compared to Perceptions by Cooperating Teachers." (Unpublished M.S. Thesis, Oklahoma State University, 1972.)

(15) Johnson, Mauritz. American Secondary Schools. New York: Harcourt Bruce & World, Inc., 1965.

(16) Kapfer, Philip G. "Behavioral Objectives and the Curriculum Processor." Behavioral Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

(17) Krathwohl, David R. "Stating Objectives Appropriately for Program, for Curriculum, and for Instructional Design." Behavioral Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

(18) Mager, Robert F. Developing Vocational Instruction. California: Fearon Publishers, 1967.

(19) Mager, Robert F. Preparing Instructional Objectives. 2nd Ed. California: Fearon Publishers, Inc., 1975.

(20) Myers, Donald A. Decision-Making in Curriculum and Instruction. Ohio: Institute for Development of Educational Activities, 1970.

(21) Penner, Wayman R. "Perceptions of the Nature and Scope of Adult Vocational Teacher Education Needs as Held by Adult Students, Teachers and Coordinators of Adult Education in Oklahoma Area Vocational-Technical Centers." (Unpublished Ed.D. dissertation, Oklahoma State University, 1972.)

(22) Rahmlow, Harold H. "Specifying Useful Instructional Objectives." Behavior Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

(23) Simpson, Elizabeth. "Educational Objectives in the Psychomotor Domain." Behavioral Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

(24) Tyler, Ralph W. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago Press, 1975.

(25) Tyler, Ralph W. "Some Persistent Questions on the Definitions of Objectives." Behavioral Objectives in Curriculum Development. Ed. Miriam B. Kapfer. New Jersey: Educational Technology Publications, Inc., 1971.

QUESTIONNAIRE ON CURRICULUM EVALUATION FOR
AFGHANISTAN VOCATIONAL AGRICULTURE
HIGH SCHOOLS (VAHS)

Name of respondent:_____

Position of respondent:_____

Year of graduation:_____

Institution from which graduated:_____

Type of degree held:_____

Years of service in present position:_____

Subjects taught:_____

Directions: This questionnaire will aim to find out how useful, applicable, and effective the present VAHS curriculum is considered to be by teachers and graduates of these schools. It is based on the curriculum guide for the vocational schools in Afghanistan. The contents of the guide for vocational subjects have been considered and formulated in the form of course objectives so that the respondents could respond to three columns facing each objective for their usefulness, applicability, and effectiveness by putting a check mark in the appropriate column.

Part I

General Views

1. Do you think that 49.3% of the time that is appropriated for the vocational subjects compared to 50.7% of the time for the non-vocational subjects is appropriate? Yes_____ No_____
2. Please check in the appropriate column facing each subject.

Subject	% of Time	Leave Same	Slightly Decrease	Heavily Decrease	Slightly Increase	Heavily Increase
Vocational Subjects						
Agricultural Engineering	8.3					
Animal Husbandry	10.0					
Agronomy	10.0					
Agricultural Extension	2.5					
Botany	9.2					
Entomology	1.7					
Farm Management	1.7					
Forestry	2.5					
Horticulture	1.7					
Plant Pathology	1.7					
Non-Vocational Subjects						
Chemistry	8.3					
Dairy	7.5					
English	17.5					
Math	6.7					
Physics	3.3					
Physical Education	1.7					
Pushto	5.0					
Study Hall	0.8					

Part II

In this part the main contents of vocational subjects are prepared in the form of educational objectives facing three columns--that of usefulness, applicability, and effectiveness--so that the respondents would check each of these columns for each objective. The objectives in this part of the questionnaire are condensed from the curriculum guide for vocational schools. Please check one column under each heading for each objective as follows:

1 = Great deal 2 = Much 3 = Same 4 = Little 5 = None

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Agricultural Engineering															
1. Appreciation of the importance of carpentry in agriculture															
2. Ability in making carpentry projects such as poultry feeders, etc.															
3. Appreciation of importance of metal work in agriculture															
4. Skill in repairing farm tools															
5. Skill in soldering															
6. Skill in land measurement															
7. Appreciation of leatherwork															
8. Skill in measuring metals															
9. Skill in cutting metal															
10. Skill in filing metal															
11. Skill in drilling and riveting metal															
12. Skill in painting wooden and metal projects															
13. Skill in sharpenting tools															
14. Appreciation of the use of modern tools															
15. Understanding the operation of diesel engines															
16. Understanding the operation of gas engines															
17. Skill in assembling and disassembling farm machinery															
18. Understanding the operation of water pumps															
19. Skill in mixing and using concrete in building farm projects															
20. Skill in planning farm buildings															

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Animal Husbandry															
1. Appreciation of the importance of livestock in agriculture															
2. Understanding the origin of local breeds of livestock															
3. Recognition of the uses of livestock products															
4. Understanding the animal need for housing															
5. Understanding the animal need for feed															
6. Understanding the methods of animal breeding															
7. Skill in animal identification															
8. Skill in selecting animals															
9. Skill in judging animals															
10. Skill in shearing sheep															
11. Skill in dehorning cattle															
12. Skill in telling animals' ages by their teeth															
13. Skill in determining weight of animals by formula															
14. Appreciation of history and importance of animal breeding															
15. Understanding the principles of genetics															
16. Understanding the times of breeding for farm animals															
17. Understanding the animal feeds															
18. Understanding the function of food in body growth															
19. Understanding the function of the animal digestive system															
20. Skill in calculating proper ration for animals															
21. Understanding milk and milk products															
22. Appreciation of animal hygiene															
23. Recognition of local diseases of farm animals															
24. Ability in prevention and treatment of animal diseases															
25. Skill in castrating farm animals															

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Agronomy															
1. Appreciation of importance of agriculture in the life of the people															
2. Recognition of branches of agriculture															
3. Understanding soil formation and the parent material of soils															
4. Understanding of soil profiles															
5. Understanding the soil's optimal condition for plant growth															
6. Understanding the use of different fertilizers in improving the soil															
7. Understanding the plant rotation in the improvement of soil															
8. Recognition of different field crops grown in Afghanistan															
9. Recognition of feed sources															
10. Ability in the proper use of seed															
11. Ability in irrigating the various field crops															
12. Ability in cultivation of various field crops															
13. Understanding the difference between row planting and broadcasting															
14. Understanding the techniques of plant improvement															
15. Ability in the use of hotbeds and coldframes in planting vegetables															
16. Ability in harvesting and storing vegetables															
17. Ability in protecting the vegetables from diseases and insects															
18. Ability in collecting vegetable seed															
19. Ability in testing seed for germination															
Agriculture Extension															
1. Understanding the meaning of agriculture extension															
2. Recognition of ideal characteristics of an extension officer															
3. Ability in determining farmers' needs															
4. Familiarity with visual aids and their use															
5. Ability to control meetings															
6. Leadership ability															
7. Ability in evaluating extension program															

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Botany															
1. Appreciation of the importance of botany in agriculture															
2. Understanding the cell and its functions															
3. Understanding the different kinds of roots and their functions															
4. Understanding the tissue and its functions															
5. Understanding the different types of stems and their functions															
6. Understanding the different kinds of leaves and their functions															
7. Understanding the different types of flowers and their functions															
8. Understanding osmosis															
9. Understanding photosynthesis															
10. Understanding plant respiration															
11. Understanding the importance of chlorophyl in plants															
12. Understanding the nitrogen cycle															
13. Understanding plant hormones															
14. Recognition of plant classification															
15. Understanding plants' parasites															
Entomology															
1. Appreciation of history and importance of insects															
2. Recognition of insect mouth parts															
3. Recognition of internal parts of insects															
4. Recognition of external parts of insects															
5. Recognition of insect classification															
6. Ability to control destructive insects															
7. Ability to preserve useful insects															
8. Ability to prepare insecticides to control destructive insects															
9. Ability to apply insecticides to control destructive insects															

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Farm Management															
1. Appreciation of importance of economics in farm management															
2. Ability to select a farm															
3. Ability to manage a farm															
4. Ability to manage livestock															
5. Understanding the principles of supply and demand in buying and selling farm products															
6. Ability to weigh and measure															
Forestry															
1. Understanding the importance of forestry in Afghanistan															
2. Understanding the terms used in forestry															
3. Recognition of forest trees grown in Afghanistan															
4. Understanding forest protection methods															
5. Ability to plant and take care of a nursery															
6. Ability to fertilize and irrigate a nursery															
7. Ability to prune forest trees															
8. Ability to graft trees															
9. Ability to collect and store seeds from forest trees															
Horticulture															
1. Appreciation of the importance of horticulture															
2. Understanding the history and branches of horticulture															
3. Understanding the reproduction of fruits, vegetables, and the ornamental plants															
4. Ability to plan and take care of a fruit, vegetable and ornamental garden															
5. Ability to graft fruit trees															
6. Ability to prune fruit trees															
7. Ability to fertilize and irrigate fruit, vegetable and ornamental gardens															

Objectives	Extent of Usefulness					Applicability to Local Conditions					Effectiveness				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Plant Protection															
1. Appreciation of history and importance of plant protection															
2. Understanding the causes of diseases in plants															
3. Understanding the methods of prevention for plant diseases															
4. Recognition of chemicals used in prevention of plant diseases															
5. Ability to prepare chemicals for the prevention of plant diseases															
6. Ability to apply chemicals for the prevention of plant diseases															

VITA 2

Mir Aqa

Candidate for the Degree of

Doctor of Education

Thesis: THE PERCEPTIONS OF HIGH SCHOOL VOCATIONAL AGRICULTURE TEACHERS AND THEIR GRADUATES AS TO CURRICULAR NEEDS FOR VOCATIONAL AGRICULTURE IN AFGHANISTAN

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Dehdana, Kabul, Afghanistan, 1930, the son of Mr. and Mrs. Sayed Baba.

Education: Graduated Kabul Vocational Agriculture High School, 1952; received Bachelor of Science degree from the University of Wyoming, August, 1958; received Master of Science degree in Agricultural Education from Oklahoma State University, August, 1964; completed requirements for Doctor of Education degree at Oklahoma State University, May, 1978.

Professional Experience: Taught Animal Husbandry in Kabul Vocational Agriculture School, 1954 to 1956; served as assistant principal of Kabul Vocational Agriculture High School, 1955-1956; taught Animal Husbandry and Agricultural Engineering, 1958-1963; served as Baghlan Vocational Agriculture High School principal, 1965-1967; served as Agricultural Education instructor in College of Agriculture, 1967-1973; served as Dean of College of Agriculture, August, 1973, to December, 1974.