

CHARACTERISTICS OF LAND LABORATORIES IN FLORIDA

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According to Phipps (1972), early in the history of agricultural education in the United States, schools maintained farms where students received experience and instruction. These farms were used primarily to demonstrate new agricultural techniques, machinery, and crop varieties. However, in the early 1900s, Dr. Rufus Stimson of Massachusetts introduced the home farm project to the vocational agriculture program (Stuck, 1945). The home farm project was intended to be a functional method for allowing students to gain farming experience. After the introduction of the home farm project, many schools sold or disposed of their school farms or land laboratories (Phipps, 1972).

Since the early 1900s, national interest in school land laboratories has fluctuated. However, in Florida, interest in land laboratories has been consistently high, according to an article by Statler and Juhl (1970) and research by Poucher (1952). Statler and Juhl (1970) indicated that school land laboratories had existed for 55 years in Florida and played an important role in the instructional programs, and Poucher (1952) found that 90 percent of the departments surveyed had an operational land laboratory. Since 1952, no research regarding school land laboratories has been conducted in Florida.

Objectives

The purpose of this study was to identify and describe the current status, use, and educational purpose of school land laboratories associated with the agribusiness and natural resources education programs in Florida. The specific objectives were to:

1. Describe characteristics of land laboratories.
2. Describe uses made of land laboratories by teachers.
3. Determine perceptions of teachers concerning the primary purposes of land laboratories.

Research Procedure

Sample Investigated

The sample for this study was generated from a population consisting of agribusiness and natural resources education

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departments in operation during the 1977-1978 school year. At least one department in each county was drawn for the sample. For counties with six or more departments, 30 percent of the departments were included in the sample. A table of random numbers was used to select the sample from each county. One teacher was arbitrarily selected from each department included in the sample and requested to respond to the questionnaire. One hundred and two departments constituted the sample investigated.

Instrumentation

In order to obtain the required information, a closed-form questionnaire was developed. Questions and perceptions were developed as a result of reviewing relevant literature, reviewing questionnaires used in other studies regarding land laboratories, and conferring with University faculty members.

The tentative instrument was field tested in order to establish validity. Eleven teachers from each of the five administrative regions of the state served as jury members. Ten graduate students were also asked to participate in evaluating the tentative instrument. Suggestions and recommendations were assimilated and provided the basis for instrument modifications.

Data Collection Procedure

Questionnaires were mailed to each of the 102 subjects identified in the sample, and two follow-up contacts were made. Data were received from 87 (85 percent) of the departments in the sample.

Statistical Analyses

To analyze the data, the frequency, cumulative frequency, percent, and cumulative percentage for each response was determined. In addition to these statistics, means and rank order of responses were determined for data pertaining to objective 3.

Findings

In the interest of conciseness, the following summary is presented regarding characteristics and uses made of land laboratories in Florida:

1. Over 90 percent of the departments had land laboratories, most of which had been in existence seven or more years.
2. Fifty-six percent of the land laboratories were ten acres or less, while 2.6 percent were 201 acres or more.
3. Fifty-seven and one-half percent of the responding departments were located in senior high schools, 28.7

percent were located in middle or junior high schools, 12.5 percent were located in junior-senior high schools, and 1.3 percent were located in agricultural schools.

4. The most common method of obtaining the land laboratory was through school purchase.
5. Twenty-five percent of the departments had a designating sign on the land laboratory.
6. Over two-thirds of the land laboratories were within one-half mile of the classroom, and the most common mode of transportation to the land laboratory was walking.
7. Irrigation facilities were the most common facilities found on the land laboratory, followed by fences, shade areas, machinery storage buildings, greenhouses, livestock holding pens, irrigation pumps, barns, classrooms, and stables.
8. Handtools were indicated as being the most frequent types of machinery or equipment found on the land laboratory, followed by tractors, mowers, disks, cultivators, plows, irrigation equipment, planters, harrows, trucks, squeeze chutes, livestock trailers, and scales.
9. Over one-half of the respondents indicated that the equipment on the land laboratory was purchased by the agriculture department.
10. Electricity was available on 69 percent of the land laboratories.
11. Over two-thirds of the departments had advisory committees. Of those departments having advisory committees, 82 percent of the committees provided advice specifically regarding the land laboratory.
12. Two-thirds of the responding departments indicated that they provided a report to the school administration regarding the operation and financial situation of the land laboratory. Most frequently, departments reported annually; 25 percent reported as requested; however, 6.1 percent reported monthly.
13. The FFA and the school board were the major sources of funds for the operation of the land laboratory.
14. Approximately 45 percent of the departments had an annual gross income of \$499 or less from the land laboratory while 13.2 percent reported an annual gross income of \$5,000 or more.

15. Profits of \$499 or less were indicated by 57.3 percent of the departments. Over 10 percent indicated annual profits of \$3,000 or more.
16. Most of the departments deposited funds generated from the land laboratory into the FFA Chapter account or the agriculture department account.
17. Approximately two-thirds of the respondents indicated that the most frequent uses of the land laboratory profits were for general FFA activities and land laboratory equipment and supply purchases.
18. Over 40 percent of the departments indicated that they had written policy and objectives for the land laboratory.
19. The person most responsible for establishing the instructional and operational policies of the land laboratory was the teacher.
20. More than 70 percent of the departments indicated that demonstration plots were present on the land laboratory.
21. Slightly more than half of the departments did not have student-owned projects on the land laboratory. Of those having student-owned projects, more than 80 percent of the departments had fewer than 24 percent of their students with projects on the land laboratory. Less than 25 percent of those having student-owned projects on the land laboratory charged rent.
22. The most frequently raised animals on the land laboratory were beef cattle followed by swine, poultry, dairy cattle, and horses.
23. Vegetable crops were the most frequently raised plants on the land laboratory followed by ornamentals, pasture grasses, agronomic crops, forestry, fruit crops, and turf.
24. Approximately 87 percent of the departments kept records regarding the land laboratory. Of those keeping records, approximately 60 percent indicated that the teacher and class assumed responsibility for keeping them.
25. Seventeen percent of the departments indicated that teachers were receiving extra compensation for managing the land laboratory.
26. More than 60 percent of the departments had insurance covering persons working on the land laboratory.
27. Two-thirds of the departments had no groups using the land laboratory other than vocational agriculture

classes. The largest groups using the land laboratory other than vocational agriculture classes were elementary classes and adult classes.

28. Most departments (83.1 percent) did not hire any persons other than the teacher to work on the land laboratory. Of those departments which did have persons hired, most were hired on a part-time basis to perform general custodial duties.
29. The FFA chapter and the school board were the most frequent sources of funds for the salaries of persons hired to work on the land laboratory.
30. Most routine work performed on the land laboratory took place during class.
31. More than 40 percent of the respondents indicated that teachers in their department spent two days per week with every class on the land laboratory, while 9 percent indicated that they spent five days per week on the land laboratory.

The following results identify the perceptions of teachers regarding selected statements pertaining to the primary purposes of the land laboratory. Teachers were asked to indicate the level of importance of each statement regarding the primary purposes of the land laboratory as they were currently using it. Each statement was responded to on a four-point Likert scale with numerical values equated to responses as follows: 3--Very Important; 2--Somewhat Important; 1--Not Important; and 0--Not Applicable. The results are displayed in Table 1.

It may be observed that the most important purpose of the land laboratory as indicated by the respondents was "to provide opportunities to practice competencies learned in class." The second most important statement was "to provide experiences for students to work together cooperatively," and the third was "to teach agricultural competencies."

Conclusions

From the findings of this study, the following conclusions were drawn:

1. The land laboratory is an important component of agribusiness and natural resources education.
2. Based on the 21 characteristics of land laboratories studied, it was concluded that a moderate degree of variability existed among land laboratory characteristics.

Table 1

MEANS, RANK ORDER, NUMBER, AND FREQUENCY OF RESPONSES REGARDING
TEACHERS' PERCEPTIONS OF THE PURPOSES OF THE LAND LABORATORY

Purposes	Means	Rank Order	N	Frequencies			
				3	2	1	0 ^a
To provide opportunity to practice competencies learned in class	2.95	1	75	69	7		
To provide students experience in working cooperatively	2.84	2	77	65	12		
To teach agricultural competencies	2.83	3	76	63	13		
To demonstrate improved practices	2.63	4	75	48	26	1	
To provide supervised occupational activities for students	2.37	5	76	41	15	15	5
To provide a location for FFA projects	2.26	6	72	26	25	10	11
To make money	2.16	7	74	25	30	14	5
To provide agricultural experiences for those not enrolled in vocational agriculture	2.14	8	72	7	38	27	14
To provide publicity for the FFA and department	2.00	9	74	13	40	13	8
To provide locations for student-owned projects	1.97	10	73	16	25	18	14
To provide summer educational experiences for students	1.80	11	72	8	27	19	18
To conduct agricultural demonstrations for the community	1.69	12	73	8	25	26	14
To provide summer employment for students	1.40	13	74	3	15	34	22
To provide part-time employment for students	1.35	14	70	3	11	34	22

^aNumbers appearing in this column were not included in calculating the mean.

3. Teachers were principle decision makers regarding daily operations, annual management decisions, and establishment of instructional policies regarding land laboratories.
4. Teachers of agribusiness and natural resources made extensive and varied use of land laboratories and used a great deal of class time on the land laboratory.
5. The three most important purposes of the land laboratory, as perceived by teachers, were to provide an opportunity to practice competencies learned in class, to provide students experience in working cooperatively, and to teach agricultural competencies.
6. The three least important purposes of the land laboratory, as perceived by teachers, were to provide summer employment for students, to provide part-time employment for students, and to conduct agricultural demonstrations for the community.

Recommendations

Based on the findings and conclusions drawn from this study, the following recommendations appear to be in order:

1. Research should be initiated to identify and develop policies and objectives essential for successful operation of land laboratories in Florida.
2. This study should be replicated five years hence to ascertain what changes have occurred regarding land laboratories in Florida.
3. Characteristics of successful land laboratories should be identified, as the central purpose of a separate study, to supplement information regarding land laboratories identified in this study.

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