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IDENTIFICATION OF EXPERIENCES IN APPLIED BIOLOGICAL SCIENCE AND AGRIBUSINESS OF SEVENTH GRADE STUDENTS*

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Today's youth have considerable opportunity for educational experiences away from the school. These experiences gained during the elementary and junior high school years can influence the vocational desires of youth. Also, expressed interests and aspirations have direct implications for occupational guidance and curriculum planning in the secondary school.

Procedure

In a study to identify the applied biological science oriented experiences of seventh grade students and to describe student aspirations for future study of applied biological and agribusiness subjects, a random sample of 1286 seventh grade students was selected in Nebraska. The sample represented 10.6 percent of the seventh grade students in Nebraska in 1970, and was selected by drawing a 5 percent random sample of schools within each of eight mutually exclusive class groupings as defined by the Nebraska State Department of Education.¹ Table 1 shows the number of students tested in each group.

Results being summarized in this report are based on data obtained on the following descriptive variables:

1. Sex
2. Race (Ethnic origin)
3. Place of residence

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TABLE 1

NUMBER OF SEVENTH GRADE STUDENTS IN THE RANDOM SAMPLE BY SCHOOL GROUP

School Class Group ¹	Number of Schools	Number of Students
1	1	11
2	6	103
3	9	595
4	3	162
5	5	261
6	1	57
7	1	17
8	5	80
TOTALS	<u>31</u>	<u>1286</u>

¹For description of groups, refer to Page 16.

4. Parents' occupation
 5. Type of business of parent's employer
 6. Eighteen applied biological and agribusiness experiences
 7. Eight agribusiness subject areas
 8. Desire of seventh grade students to enroll in high school agribusiness subjects
1. Of the 1286 respondents, 637 were boys and 649 were girls.
 2. The race (ethnic origin) variable showed:
 - a. 1196 or 93 percent were white Caucasian
 - b. 64 or 5 percent were Negro
 - c. 16 or 1.24 percent were Indian
 - d. 9 or .7 percent were Spanish or Mexican
 - e. 1 or .06 percent was Oriental
 3. Of the 1216 who responded concerning place of residence:
 - a. 647 or 50 percent lived in cities of 5,000 or more
 - b. 345 or 27 percent lived in small town of 5,000 or less
 - c. 230 or 18 percent lived on production farms
 - d. 44 or 3.4 percent lived in rural residences
 4. Of the 1168 students who responded concerning the occupation of their parents:
 - a. 302 or 23.5 percent had parents in agricultural occupations
 - b. 603 or 47 percent had parents in trade and industrial jobs

- c. 209 or 16 percent had parents in business or office occupations
 - d. 13 or 1.01 percent had parents in home economics wage earning occupations
 - e. 41 or 3.19 percent had parents in health occupations
 - f. 116 or 9.02 percent did not respond. This may have been because the student did not know, or the parent was unemployed
5. Type of business of parents' employers showed that
- a. 324 or 25.19 percent of the students' parents work in agricultural businesses
 - b. 439 or 34.14 percent of the students' parents work in trade and industrial businesses
 - c. 149 or 11.59 percent of the students' parents work in business and office businesses
 - d. 9 or .70 percent of the students' parents work in home economics wage earning oriented businesses
 - e. 37 or 2.88 percent of the students' parents work in health oriented businesses
 - f. 328 or 25.51 percent did not respond. This may have been due to the students not knowing, or the parent being unemployed
6. Each student was asked to check each of 18 specific applied biological and agribusiness experiences that he had participated in. Table 2 shows the number and percent of respondents who indicated participation in each experience, by sex.

Over 70 percent of the students in the sample said they had experienced:

- a. helping to care for small animals
- b. helping to care for gardens and flowers
- c. helping to care for lawn, shrubs and trees
- d. operating a lawnmower

Nearly as many girls as boys answered yes in each of the four activities.

At least 45 percent and not more than 63 percent indicated they had experienced:

- a. helping with crops on a farm
- b. helping with livestock on a farm
- c. helping to operate farm, garden or lawn machinery
- d. having a dog as a pet
- e. operating home workshop power tools

TABLE 2

EXPERIENCES HAD BY SEVENTH GRADE STUDENTS WHO COMPLETED THE APPLIED BIOLOGICAL AND AGRIBUSINESS INTEREST INVENTORY, BY SEX

Type of Experience	Male		Female		Total	
	No.	Per- cent	No.	Per- cent	No.	Per- cent
1. Helping with crops on a farm	348	54.6	243	37.4	591	45.9
2. Helping with livestock on a farm	369	57.9	306	47.1	675	52.4
3. Helping to care for small animals	471	73.9	543	83.7	1014	78.8
4. Helping to care for garden and flowers	436	68.4	551	84.9	987	76.7
5. Helping to care for lawn, shrubs, and trees	482	75.7	468	72.1	950	73.8
6. Helping to care for a park or forest	109	17.1	80	12.3	189	14.7
7. Helping in a farm or garden supplies store	77	12.1	50	7.7	127	9.8
8. Helping to prepare food products for sale	135	21.2	143	22.0	278	21.6
9. Helping to operate farm, garden, or lawn machinery	469	73.6	356	54.9	825	64.1
10. Helping to adjust or repair small machines	401	63.0	162	25.0	563	43.7
11. Have a pet:						
dog	340	53.4	332	51.2	672	52.2
cat	79	12.4	113	17.4	192	14.9
bird	7	1.1	10	1.5	17	1.3
horse	23	3.6	24	3.7	47	3.6
other	27	4.2	41	6.3	68	5.2
12. 4-H Club Member	82	12.9	156	24.0	238	18.5
13. Had a part-time job last summer:						
agricultural	190	29.8	53	8.2	243	18.9
trade and industry	93	14.6	26	4.0	119	9.2
business and office	2	0.3	1	0.2	3	0.2
home economics wage earner	6	0.9	177	27.3	183	14.2
health	0	0.0	0	0.0	0	0.0

TABLE 2 (Continued)

Type of Experience	Male		Female		Total	
	No.	Per- cent	No.	Per- cent	No.	Per- cent
14. Driving a car	235	36.9	145	22.3	380	29.5
15. Driving a tractor	315	49.5	175	27.0	490	38.1
16. Driving a motor bike or motor cart	281	44.1	125	19.3	406	31.5
17. Operating a lawn mower	562	88.2	451	69.5	1013	78.7
18. Operating home work- shop power tools	416	65.3	163	25.1	579	45.0

Approximately 30 percent more boys than girls checked (a), (b), and (c) above, three times as many boys as girls checked (e), and about as many boys as girls checked (d).

7. Each student was asked to indicate which one of 18 specific applied biological and agribusiness oriented activities they enjoyed most. Table 3 shows the number and percent of respondents who checked each experience, by sex.

TABLE 3

EXPERIENCE ENJOYED MOST BY SEVENTH GRADE STUDENTS WHO COMPLETED THE APPLIED BIOLOGICAL AND AGRIBUSINESS INTEREST INVENTORY, BY SEX

Type of Experience	Male		Female		Total	
	No.	Per- cent	No.	Per- cent	No.	Per- cent
1. Helping with crops on a farm	28	4.4	8	1.2	36	2.8
2. Helping with livestock on a farm	56	8.8	48	7.4	104	8.0
3. Helping to care for small animals	51	8.0	219	33.7	270	21.0
4. Helping to care for garden and flowers	15	2.4	45	6.9	60	4.6

TABLE 3 (Continued)

Type of Experience	Male		Female		Total	
	No.	Per- cent	No.	Per- cent	No.	Per- cent
5. Helping to care for lawn, shrubs, and trees	11	1.7	4	0.6	15	1.1
6. Helping to care for a park or forest	3	0.5	5	0.8	8	0.6
7. Helping in a farm or garden supplies store	7	1.1	5	0.8	12	0.9
8. Helping to prepare food products for sale	5	0.8	5	0.8	10	0.7
9. Helping to operate farm, garden, or lawn machinery	30	4.7	32	4.9	62	4.8
10. Helping to adjust or repair small machines	30	4.7	7	1.1	37	2.8
11. Working with pet	25	3.9	43	6.6	68	3.2
12. Being a 4-H Club member	4	0.6	17	2.6	21	1.6
13. Working at part-time job	34	5.3	28	4.3	62	4.8
14. Driving a car	68	10.7	6	0.9	104	8.0
15. Driving a tractor	48	7.5	20	3.1	68	5.2
16. Driving a motor bike or motor cart	85	13.3	26	4.0	111	8.6
17. Operating a lawn mower	19	3.0	17	2.6	36	2.8
18. Operating home workshop power tools	15	2.4	4	0.6	19	1.4

Twenty-one percent indicated they enjoyed caring for small animals, with four times as many girls as boys responding. Eight percent enjoyed driving a car, motor bike or cycle, with at least twice as many boys as girls responding yes. From 4 to 5 percent enjoy caring for gardens and flowers, helping to operate farm, garden and lawn machines, working with a pet, driving a tractor, or working at a part-time job. The preference based on sex varied with the activity.

8. Students were asked which of eight subject areas they would like to learn more about. Table 4 shows the number and per-

cent of students checking each subject area by sex. Nearly half of the 1286 students in the sample indicated they would like to learn more about job opportunities for young workers, with nearly 35 percent more girls than boys indicating this desire. Almost one-third said they wanted to learn more about growing livestock and crops, mechanics and tractor operation and soil, water and wildlife conservation. Boys' responses were stronger in these three activities. One-fourth of the students wanted to learn more about business and store operation, with 30 percent more girls than boys showing this interest. Also, almost one-fourth of the students desired to learn more about growing and selling horticultural plants and flowers, with over three times the interest from girls as for boys.

TABLE 4

SUBJECT AREAS THAT SEVENTH GRADE STUDENTS WHO COMPLETED THE APPLIED BIOLOGICAL AND AGRIBUSINESS INTEREST INVENTORY INDICATED THEY WOULD LIKE TO LEARN MORE ABOUT, BY SEX

Subject Areas	Male		Female		Total	
	No.	Per- cent	No.	Per- cent	No.	Per- cent
1. Growing livestock and crops	242	38.0	172	26.5	414	32.1
2. Business and store operation	140	22.0	192	29.6	332	25.8
3. Mechanics and tractor operation	341	53.5	5	0.8	416	32.3
4. Processing and selling food products	53	8.3	89	13.7	142	11.0
5. Growing and selling plants and flowers	67	10.5	229	35.3	296	23.0
6. Soil, water, and wild-life conservation	231	36.3	191	29.4	422	32.8
7. Forestry and tree care	119	18.7	109	16.8	228	17.7
8. Job opportunities for young workers	256	40.2	380	58.6	636	49.4

9. Of the 1286 students in the sample, 835 or 64.93 percent indicated they would enroll in a high school course to study agricultural subjects concerning animals, plants, mechanics, or

agribusiness. Table 5 shows the breakdown by school class group. Of the 835 students indicating they would enroll, 420 were boys and 415 were girls.

TABLE 5

STUDENTS COMPLETING THE APPLIED BIOLOGICAL SCIENCE INTEREST INVENTORY WHO INDICATED THEY WOULD ENROLL IN A HIGH SCHOOL COURSE TO STUDY AGRIBUSINESS SUBJECTS, BY SCHOOL CLASS GROUP

School Class Group ¹	Students in the Sample		Estimated Number in Nebraska
	Number	Percent	
1	8	72.7	43
2	87	84.5	1428
3	401	67.4	4321
4	93	57.1	1746
5	115	44.1	660
6	46	80.7	320
7	15	88.2	20
8	69	86.3	44
TOTALS	834	64.9	8582

¹For description of group, refer to Page 16.

It is clearly evident from the results described, that seventh grade students in Nebraska have gained considerable exploratory experiences through formal and informal learning routes.

School curriculum planners must be cognizant of the kinds of vocationally oriented experiences youth are obtaining, because in many cases formal school instruction may come after the youth has already participated in a particular experience, and has developed acceptable or possibly undesirable procedures.

It seems much more practical for educators to realize that young people are participating in vocationally oriented experiences at the junior high school age level, and to more accurately match formal school programs with desires of youth, with particular emphasis on developing exploratory vocational courses where junior high students can observe the "world of work" so they can make decisions about which courses to pursue in high school.

¹School Class Group:

- 1-Districts with grades K-8 only with seven or more teachers
- 2-Districts of under 1,000 population with grades K-12
- 3-Districts of 1,000 to 50,000 population with grades K-12
- 4-Districts of 50,000 to 200,000 population with grades K-12
- 5-Districts of over 200,000 population with grades K-12
- 6-Districts organized with grades 7-12 only
- 7-State operated elementary schools
- 8-Districts with grades K-8 with six or less teachers

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