cent taking part in athletics. It was also revealed that boys in small high schools averaged 21.4 per cent greater participation in extra-curricular activities than those from medium sized schools, and 46.3 per cent more than those from the large high schools.

In the university these same students were most active in the School of Agriculture clubs with 78.2 per cent participating. This was closely followed by R.O.T.C. which, at the time of this study, was compulsory but which was listed as having leadership connotations.

Contrary to the relationship in high school, the size of high school from which these students graduated had essentially no significance upon the degree of participation in university extra-curricular activities.

However, there was a marked difference when the students were separated into four different groups according to their rank in their high school graduating class. Those in the first quartile averaged 25.5 per cent more activity points than did those in the second quartile, 32.4 per cent more than those in the third quartile, and 59.0 per cent more than the fourth quartile group.

The 138 respondents were rated by a committee of 14 professors on ten personality characteristics closely associated with proven leaders as determined by previous research. It was found that in nearly all of the characteristics there was a noticable difference when the students were grouped by grade point averages and then compared. At the university level the better the student the higher his personality rating, and also the greater his involvement in leadership activities.

Following graduation and becoming established in some community with a job, it was found that the greatest participation by all the respondents was in church activities. The second greatest degree of participation was in farm organizations.

When comparing the total activity scores of high school, university, and post-graduation participation on the basis of size of high school attended, it was found that those from small high schools had a 7.6 per cent greater participation than those in medium-sized schools, and 30.3 per cent greater than those from the large high schools.

## CONCLUSIONS FROM STATISTICAL ANALYSIS

The purpose of the statistical analysis was to determine whether there is any association between high school and/or university performance and community leadership. In order to do this 14 hypotheses were developed at the beginning of this study. By means of the Wherry-Doolittle Multiple Regression Method of statistical analysis the following conclusions were reached:

1. The size of high school from which a student graduates does not have a marked influence on community leadership involvement following graduation from university.
2. There is a significant positive correlation between a student's participation in high school activities and his participation in university activities.
3. Student participation in high school activities does have greater significance in relation to post-university graduation leadership involvement than does participation in university activities.
4. There is no significant correlation between the combined leadership activities engaged in by a student while in high school and in the university, and his post-graduation leadership activities.
5. The high school principal's evaluation of a student's behavior is of greater significance in predicting leadership involvement than is the student's personality rating when in college. In fact, a student's attitude and behavior in high school had the highest coefficient of correlation of any of the independent variables.
6. A student's overall university grade point average is of little significance in relation to leadership involvement in community affairs following graduation.
7. There is a significant correlation between the kinds of employment engaged in after graduation and leadership involvement.
8. The high school principal's estimate of a student's probable success does have a significant positive relationship with leadership involvement following graduation from the university.
9. Rank in the high school graduating class does not show a strong correlation with leadership activities following graduation from the university.
10. The length of time a person has been graduated from the university does not significantly influence his involvement in community leadership activities.
11. The coefficient of correlation was sufficiently high to indicate that there is a significant relation between the number of years after graduation from the university and leadership responsibilities in the most recent job held.
12. It was proven that there is a strong correlation between the job held, or rating, and leadership activities in the community.
13. The university over-all grade point average is strongly significant in relation to leadership involvement in the current job.
14. A person's rank in his high school graduating class is not a significant factor in indicating his leadership involvement in the kind of work engaged in following graduation from the university.

Of the above 14 hypotheses, nine were found to be valid and five were invalid.

Using the "post-graduation leadership activity rating" as the dependent variable, it was found that the most important single factor in predicting the degree of participation in leadership activities following graduation from the university was the student's behavior pattern while in high school.

With "job-rating" as the dependent variable it was determined that the overall university grade point average earned in school is the one most important factor in determining the degree of leadership involvement in a community following graduation based upon the kind of employment engaged in.

Finally, from the results of this study it appears that there is not an increasing degree of general participation in leadership activities on the part of students from high school to university to post-university life. On the basis of evidence submitted, it appears that participation is greatest at the high school level, then in community life following graduation from the university, and thirdly at the university level.

[1]Browne, C. G. and Cohn, T. S. "The Study of Leadership." Interstate Publishing Company, 1958.

[2]Cowley, W. "Three Distinctions in the Study of Leaders." Journal of Abnormal and Social Psychology. Vol. 23, 1955.

# Relative Importance of Selected Topics in Five Subject Matter Areas of Agricultural Mechanization

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Agricultural education has been offered for a period of ten years as a major in the Department of Agricultural Industries at Southern Illinois University. Three beginning agricultural mechanization courses have been required, covering five subject matter areas including: general shopwork,* farm power and machinery,* farm structures and electrification.**

A survey as to relative importance of each laboratory topic covered was conducted to provide a useful evaluation of each

*Has had same instructor since program started.

**Has had several instructors since program started.

course and a basis for curriculum planning. A breakdown into three groups based on years of experience is reported in Table 1.

TABLE 1
YEARS OF EXPERIENCE OF THE TEACHERS RESPONDING

| Years of Experience | Number of Replies |
|---|---|
| 5 to 7 years | 11 |
| 2 to 4 years | 16 |
| 1 year[1] | 12 |
| TOTAL | 39 |

[1]Only replies from graduates who had taught one year or more were included.

Agricultural occupations teachers were asked to rate on a one to nine scale the importance of the topics listed, based upon the present and anticipated use of the material taught.

The study covers laboratory topics only, not lecture topics. For example, machinery management is an important topic which is better adapted to lectures and problems than to laboratory work. It is recognized that the rating given a topic may depend upon how it is taught, as well as on subject matter covered.

TABLE 2
MEAN SCORE OF RESPONDENTS TO LABORATORY TOPICS IN FARM POWER

| Laboratory Topic | Mean Score |
|---|---|
| Engine tuneup | 8.33 |
| Ignition study | 8.13 |
| Small engines | 8.06 |
| Engine testing | 7.98 |
| Diesels | 7.88 |
| Hydraulics | 7.43 |
| Fuel systems | 7.40 |
| Clutches and transmissions | 7.20 |
| Lubrication systems | 7.00 |
| Cooling systems | 6.90 |
| Power steering | 6.10 |

Table 2 gives the mean score of the respondents regarding laboratory topics in farm power. The studies of fuel, lubrication and cooling systems are rated very low. An explanation for low ratings may be that those topics on the lower end of the list lend themselves less to student participation than others. Teaching methods used for these topics should include ways to emphasize their importance to proper engine operation.

TABLE 3
MEAN SCORE OF RESPONDENTS TO LABORATORY TOPICS IN FARM MACHINERY

| Laboratory Topic | Mean Score |
|---|---|
| Chemical applicators | 7.70 |
| Combines | 7.70 |
| Balers | 7.33 |
| Seeders and planters | 7.30 |
| Corn pickers | 7.15 |
| Plows | 7.00 |
| Forage harvesters | 6.40 |
| Discs and cultivators | 6.20 |

Table 3 reports the mean score of respondents to laboratory topics in farm machinery. Similar differences prevail in range of averages to those found in farm power. Higher ratings were assigned to more complicated machines or those where adjustment is critical but less obvious, but adjustments of tillage machines, which require more horsepower hours per acre, may need greater emphasis.

TABLE 4
MEAN SCORE OF RESPONDENTS TO LABORATORY TOPICS IN GENERAL SHOPWORK

| Laboratory Topic | Mean Score |
|---|---|
| Arc welding | 8.73 |
| Gas welding | 8.53 |
| Tool fitting | 7.60 |
| Hand woodwork | 7.30 |
| Machine woodwork | 7.20 |
| Project work | 6.96 |
| Hard facing | 6.83 |
| Hand cold metal | 6.73 |
| Pipe fitting | 6.40 |
| Soldering | 5.90 |
| Metal lathe | 5.40 |
| Forge, harden, temper | 5.10 |

It was expected that the use of power woodworking tools, power saw and jointer, would have been rated above hand tools, but Table 4 which reports the mean score of respondents to laboratory topic in general shop does not support this. The same is true for machine and hand metalwork. It is difficult to explain why woodwork is rated higher than metal when the latter is considered the more important material in both production and agricultural related occupations.

TABLE 5
MEAN SCORE OF RESPONDENTS TO LABORATORY TOPICS IN FARM ELECTRIFICATION

| Laboratory Topics | Mean Score |
|---|---|
| Basic wiring skills | 8.37 |
| Electrical controls | 8.32 |
| Electric motors | 8.21 |
| Wiring fundamentals/planning | 8.18 |
| Advanced wiring skills | 7.76 |
| Electric theory/principles | 7.74 |
| Advanced wiring/planning | 7.62 |
| Wiring fixtures | 7.50 |
| Electrical code | 7.05 |

In Table 5 regarding topics for farm electrification it will be noted that all areas received a higher average rating than seven on a nine point scale. This causes the writers to question if additional areas (or an additional course) should be considered for incorporation in the farm electrification section of the structures and electricity course.

By contrast, the farm structures laboratory topics of the structures and electricity course reported in Table 6 received a varied response from the teachers. Comparatively, the farm electricity portion of the course received stronger support and greater agreement than the farm structures section.

TABLE 6
MEAN SCORE OF RESPONDENTS TO LABORATORY TOPICS IN FARM STRUCTURES

| Laboratory Topics | Mean Scores |
|---|---|
| Insulation/ventilation | 7.29 |
| Structures/storage | 7.28 |
| Parts of structures | 7.24 |
| Livestock structures | 7.16 |
| Concrete materials | 7.05 |
| Wood materials | 6.42 |
| Concrete block skills | 6.34 |
| Building loads | 6.24 |
| Farmstead planning | 6.13 |

ADVANCED COURSES

In an effort to determine the needs of teachers in the field, an open end question was used. Respondents were asked to list three areas of study in order of preference which they considered would be most useful in advanced courses.

Here, because of the wording of the question, a great variety of terms was used. Since they were also undefined, considerable judgment was required in grouping in interest areas.

TABLE 7

TOPICS MOST FREQUENTLY LISTED WHICH WERE REPORTED TO BE USEFUL IN MEETING ADDITIONAL TRAINING OF EXPERIENCED TEACHERS

| Topic | Number of Times Listed | Number of Times Listed As First Choice |
|---|---|---|
| Materials handling | 16 | 3 |
| Grain drying | 14 | 10 |
| Teaching methods in mechanization | 11 | 4 |
| Field testing and/or operation of machines | 9 | 2 |
| Power and machinery | 8 | 5 |
| Tractor mechanics and overhaul | 6 | 5 |
| Farm machinery adjustment | 6 | 2 |
| Welding | 6 | 2 |
| Electrical controls | 5 | --- |
| Practical electricity | 5 | --- |
| Farm structures | 5 | --- |
| Shop work | 4 | 3 |

The general conclusion can be made that there exists among agricultural teachers a great need for further information in materials handling, grain drying, teaching methods, farm machinery, and related equipment both in the shop and in the field.

The final question in the survey requested information as to when and at what level such advanced courses should be offered; i.e., whether during the regular university year or during a twelve-week or four-week summer quarter, and whether at graduate or undergraduate level.

As was expected, because of the twelve-month contract, 32 reported preference for a four-week time period, with only seven suggesting a twelve-week summer school offering. Surprisingly however, 21 reported the desire to have courses offered during the regular (fall, winter, or spring) in the form of Saturday or night classes. In regard to the level at which the course should be offered, 33 indicated graduate level. This is as expected because only when offered at graduate level would they now receive beneficial credit from participation. Fifteen reported the offerings should be made at the undergraduate level. This would indicate a need for the expansion of the undergraduate agricultural mechanization curriculum.

All respondents asked for more work in mechanization, none suggested less work in this area.

There were numerous requests for more practical work. This would indicate that laboratory work in mechanization is not only desirable but is essential to provide the training needed by agricultural occupations instructors in their chosen areas of work.

In conclusion while information presented was obtained from a portion of one state the results should be generally applicable to modern agricultural instruction almost anywhere in the nation. It should be helpful to instructors at all levels in curriculum planning.

# Ensminger-Interstate Distinguished Teacher Award

The following criteria will be used in selecting the recipient of the annual Ensminger-Interstate Distinguished Teacher Award of $1,000.

Final selection will be made by the NACTA Teacher Evaluation and Recognition Committee (hereafter the Committee) and award appropriately presented at the annual meeting of NACTA.

The recipient to be selected shall:

A. For 1969, 1970
   1. Be a NACTA member in good standing.
   2. Be participating in the NACTA teacher evaluation program in which he is being or has already been evaluated by his students. See the Committee report, NACTA Journal, June 1968.
   3. Be now primarily engaged in classroom teaching and for at least five years previously have been so professionally involved.
   4. Have his administrative officer (department head or dean) prepare a dossier of evidences that would establish him as an outstanding teacher and place three copies in the hands of the Committee chairman (*Dr. E. Grant* Moody, Agriculture Division, Arizona State University, Tempe, 85281) three months before the NACTA annual meeting (or April 15, 1969). This dossier should include but is not limited to:
      a. An evaluation of the applicant's qualifications as a teacher which will indicate the extent to which the teacher makes himself available for student counselling, advisory and other pedagogical activities; attracts, involves and intellectually stimulates students; keeps himself current in both his subject matter and teaching techniques; and is sincerely dedicated to the search for truth and expanding knowledge and recognizes as legitimate and encourages similar dedication among his colleagues. A completed "Teacher Evaluation by Administrative Officer" will be submitted in addition to other evidence including statements by colleagues.
      b. A letter evaluating his teaching effectiveness from a student honor society (or equivalent) of his institution (Delta Tau Alpha, Alpha Zeta, etc.)
      c. A completed "Teacher Evaluation by Alumni" form with any appropriate additional comments from each of five students who are not now enrolled in his school but who have previously been enrolled in his classes.
      d. A written statement by the teacher identifying his philosophy of teaching and how he makes it effective.
      e. Other pertinent material.