

are 4-H project books readable?

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Introduction

4-H projects account for almost one-third of the Extension publication budget in many states. Not only is money spent on printing these bulletins, but the time of the specialists, editors, and artists also adds to their cost. As travel budgets tighten, publications are becoming more important in Extension programs. The agent depends on them for information to present what used to be taught by a specialist. The 4-H leader must be able to read a booklet and pass on the contents. The 4-H member must be able to read and understand a project book with less direction from a leader. The ability of parents to read the project book and help the 4-Her is assumed.

A quick glance through many basic 4-H project books might leave a person, unfamiliar with the 4-H program, confused about the audience for whom the booklets are intended. Some basic projects are intended for teenaged audiences. In some states, the beginning booklets are to be read by parents to and for their children. In other states, beginning booklets are to be read by the young 4-Her, 8 years old, without help.

Literature Survey

Hypothesis

To test the hypothesis that 4-H materials are produced at readability levels equal to the age of the audience, a literature survey was done. A 20% random sample of states was drawn. All Extension regions were represented by at least two states and the states cooperating were assured individual anonymity in the final published data.

Each state was asked to send 5 categories of basic Unit I 4-H publications: horse, forestry, canning, nutrition, and community development projects. These projects were thought to be common throughout the nation. They also represent the five broad areas of Extension work: agriculture, natural

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resources, home economics, nutrition, and community development.

Readability Scale The Dale-Chall readability scale was selected to rate the publications because it "is consistently more accurate than others in comparison," according to readability authority George R. Klare.¹

The Dale-Chall formula is based on a vocabulary of 3,000 words understood by 80% of the 4th grade students in the United States. An index is developed from the word list that's modified by a sentence length factor. The Dale-Chall formula categorizes readability in grade levels 4th, 5-6th, 7-8th, 9-10th, 11-12th, 13-15th, and college graduate and above.² The 4-H age enrollment profile was developed from the latest national information, FY 1977.³ This information, given by age, was transposed for grade level to correspond with the Dale-Chall readability scale.

The basic premises of the Dale-Chall formula are: (1) reading becomes frustrating if the reader can't understand the words and (2) the reader is likely to become confused and lose the meaning of a sentence if it's too long.

The formula was applied to each 4-H publication. A sample of at least 100 words was used. On long publications of 39 pages or more, every 10th page was sampled. Every 5th page was sampled for project books up to 19 pages in length and every page on short bulletins, up to 10 pages. This was done until consistency was reached in the reading level rating. When several authors were identified, all were sampled.

Results The 11 states cooperating in the survey were: Florida, Georgia, Hawaii, Iowa, Louisiana, Nebraska, New Jersey, New York, Rhode Island, Tennessee, and Washington. Pennsylvania publications were also sampled, but weren't included in the data. They represented a convenient pilot for the study.

Thirty-eight publications were received and tested. Only two states could provide materials in all five categories. Two states produced materials in only one category and all states had home economics materials. Six of the 11 states produced materials for a community development project and special materials for the nutrition program.

Table 1 indicates the greatest readability range was Unit I home economics 4-H project books with a 7-8th grade mode. Most states wrote materials about canning at the junior high

Table 1. Readability of Unit I 4-H project books.

Special area	Grade-level range	Grade-level mode
Agriculture—horse	4-10	9-10
Natural resources—forestry	5-10	7-8
Home economics—canning	4-15	7-8
Nutrition	4-10	7-8
Community development	5-12	8

school level. Safety is a possible reason for directing the project at this level.

Community development is usually considered a project for older youth. The 5-12th grade range of readability with a mode of 8th grade level reflects this. The terminology required to explain fundamental concepts in this subject quickly raised the readability score. This may be a difficulty that even the best writers won't be able to overcome.

The 9-10th grade mode for the horse project basic book isn't so readily explained. Words used in the Dale-Chall formula are familiar to and used by the general population. However, many words used in the horse publications were technical terms not included in the Dale-Chall formula. The specialists writing these publications expected their audiences to know the technical words or to find out their meanings.

Table 2 shows a greater percentage of 4-H materials were written at a readability level of 7th and 8th grade. However, the largest enrollment, 38%, was at the 4th grade level or below. The next largest 4-H enrollment, 30%, was 5th and 6th grade. Eight percent of the publications were for 4th graders and below, while those for 5th and 6th graders comprised 17% of the total.

Table 2. Comparison of level of readability and enrollment percentages.

	Grade level of readability				
	11-12+	9-10	7-8	5-6	4 and below
Percentage of material written at this level	8%	22%	45%	17%	8%
Percentage of 4-H enrollment at this level	5	9	18	30	38

Conclusions

It appears that 75% of the basic Unit I publications were above the reading level of 68% of the audience that might use them. Underproduction of materials with respect to audience percentage occurred at the 4th, 5th, and 6th grade level. Overproduction was shown for 7th and 8th graders.

A need exists to shift the production of 4-H materials from the 7th and 8th grade readability level to the 5th and 6th grade. This should be done even if it means not producing materials above the 8th grade level. . . .

Overproduction would still exist even if all the 9th, 10th, 11th, and 12th and above enrollment were considered to be using these 7th and 8th grade-level materials. Only at the 11th and 12th grade level was the production of materials about even with the corresponding enrollment percentage.

Recommendation

A need exists to shift the production of 4-H materials from the 7th and 8th grade readability level to the 5th and 6th grade. This should be done even if it means not producing materials above the 8th grade level. The resources saved could concentrate on developing new materials for the 4th grade and below, the most sizable percentage of the 4-H audience.

Two factors support this seeming abandonment of the upper readability levels. One is that the recreational reading level of the general population is 9th grade.⁴ For informal education to be successful, it must be fun. George Klare writes:

Obviously an adult does not prefer the style of a first-grade reading text, but even a highly educated adult will generally find a ninth-grade level of style difficulty acceptable if the writing is expertly done.⁵

Second, sufficient materials now exist at the 7th and 8th grade level to supply the upper-age enrollment. Teenaged 4-Hers can use these project books together with adult bulletins provided by Extension specialists. Library materials could contribute even greater subject depth to the informal learning experience.

Footnotes

1. George R. Klare, *The Measurement of Readability* (Ames: Iowa State University Press, 1963), p.13.
2. Edward Dale and Jeanne Chall, "A Formula for Predicting Readability Instructions," *Educational Research Bulletin*, XVII (February, 1948), 34-57.

3. *Summary: Annual 4-H Youth Development Report* (Washington, D.C.: SEA/USDA, 1978).
4. Klare, *The Measurement of Readability*, pp. 14-15.
5. *Ibid.*, p. 12.