
**The Plans of Scientifically-talented High School
Girls in Oklahoma**

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In three consecutive years, during August, we investigated the plans of girls who had been graduated from high schools the previous spring and who had demonstrated some degree of scientific talent. The Frontiers of Science Foundation, in 1956, financed the giving of the Iowa Test of

Educational Development to 60,000 students in Oklahoma, grades nine through twelve. When the results of these tests were compiled, it was possible to obtain the names of high school girls who were scientifically talented.

The list in 1956 consisted of the names of graduating girls who were in the upper 50% in science scores and who came from high schools near the Oklahoma College for Women. The criterion of selection was raised in the next two years. Only girls with high scores in science subjects, above 80%, were selected and the choice was state-wide.

In 1957, names were selected from small schools where six girls or less were in the upper 20% category. One-half of the names used came from lists on which only one or two girls appeared. In a few cases, the schools were known to be large but the number in the upper 20% was less than six, indicating a lack of science teaching in that particular school in that particular year-class.

In 1958, girls were selected from four of the best high schools in the state, to judge from their long lists of students in the upper 20% on science scores. The high schools were Tulsa Central, Duncan, Lawton and Ponca City.

To summarize:

Year	Rank in science subjects	Area	Number on list	Number who replied
1956	50% or over	Within 20 miles of Oklahoma College for Women	100	93
1957	Upper 20%	Throughout Oklahoma. Small schools	200	164
1958	Upper 20%	Throughout Oklahoma. Four superior schools	97	93
			397	350

The data, as seen from the summary, are based on answers from 350 girls, which was an 88% return.

Results and Discussion

In all three years, the girls were asked whether or not they were going to college. If they were not, we inquired what they would be doing. If they were bound for college, we wanted to know what college they planned to attend and in what they planned to major. Contacts were made by mail except in a few instances.

During the last two years, the study was expanded, and a more extensive questionnaire was employed for the purpose of investigating a girl's motives in making her decisions. The enlarged questionnaire was developed late in 1957 and used throughout the 1958 study.

Table I. College Attendance of Scientifically Proficient High School Girl Graduates

	Going to College	Not Going to College
Girls, Average or above in science, near OCW, 1956	48%	52%
Girls, upper 20%, small schools, 1957	75%	25%
Girls, upper 20% — Tulsa Central, Duncan, Lawton, Ponca City	81%	19%
	68% average	32% average

One-third were not going to college. In the last two years of the study, when only definitely superior scores were considered, the per cent for college rose. The higher the score, the more likely the girl was to go to college (Table I).

A very striking fact was that the number going to college varied greatly between high schools as seen from these data:

High School	Talented girls not going to college.
Ponca City	41%
Duncan	19%
Tulsa Central	12%
Lawton	0%

Ponca City lost 41% of its talented girls between high school and college and Lawton lost none.

Table II. Activities of Scientifically Proficient Girls, Not Going to College

Activities substituted for college attendance	Girls average or above in science, near OCW, 1956	Girls, upper 20% small schools, 1957	Girls Upper 20% Tulsa Central, Duncan, Lawton, Ponca City
Marriage	28%	39%	59%
Office Work	16%	15%	16%
Business College	12%	7%	none
Clerking in store	10%	none	5%
Telephone operator	10%	7%	none
No employment	10%	17%	5%
Nurse's training	6%	13%	10%
Miscellaneous	8%	2%	5%
	100%	100%	100%

Marriage was the chief reason why scientifically-talented girls did not go to college. Table II seemed to show that the higher her science score, the more likely she was to marry right after high school.

Business College did not compete strongly with college among the most talented girls ('57 and '58) but nurse's training became more important.

Table III. Reasons for not going to College
Given by High Scoring High School Senior Girls
(upper 20%)

	From small schools '57	From Tulsa Central, Duncan, Lawton, Ponca City, '58
(1.) I am tired of going to school	21%	14%
(2.) It would cost more than my family can afford	21%	19%
(3.) A college education will not help me to do the things I am most interested in	18%	6%
(4.) I need and want to start earning a living	18%	17%
(5.) I am married or soon will be	18%	27%
(6.) I have a good job and do not want to give it up	none	14%
(7.) I do not want to be separated from my family and friends	4%	3%
	100%	100%

Note: Each girl was asked to check three items. Some checked more. Percentages indicated proportion of checked categories. We received 15 replies in '57 and 18 replies in '58 from girls who were not going to college.

The questionnaire was abbreviated from one described by the Educational Testing Service (1956).

Statements of an economic nature (Table III, items 3 and 4) made up a third of the list. It was evident that the feeling of lacking enough money played an important role in keeping girls from college, a reason second only in importance to marriage.

Table IV. Major Subjects Selected by Scientifically Proficient Girl High School Graduates

	Average or above, near Chickasha, '56	From small schools, '57	From Tulsa Central, Lawton, Ponca City, and Duncan, 1958
Science fields	18%	30%	27%
Business	22%	12%	12%
Education	9%	19%	18%
Home Economics	5%	7%	7%
Music	14%	7%	2%
Other	32%	25%	34%
	100%	100%	100%

Apparently, the higher the score on the science achievement test, the greater the number who plan to major in science or in education, and the fewer who select business. Nearly one-third of the upper-20% groups planned to major in some field of science. Science fields, which they listed, were chemistry, physics, mathematics, dental hygiene, medical technology, pre-dentistry, pre-medicine, pharmacy, nursing and research.

Seventy-one per cent of the 1958 group were going to Oklahoma colleges. An unexpectedly large number, constituting 29%, were leaving the state to attend an institution of higher learning. Of those remaining in Oklahoma, 33% were going to Oklahoma University, 29% to Oklahoma State University and 38% to nine other educational institutions within the state. Thus, it was apparent that the two big state schools attracted two-thirds of these girls while all the smaller colleges taken together received only about one-third of them.

A questionnaire, seeking to investigate their reasons for college-going, was received from 53 girls in 1957 and from 75 girls in 1958. The idea of sending the questionnaire was not developed until late in the 1957 study. The questions differed in the two years. Since a large number checked the item "social development" in 1957, we enlarged upon this idea in our list in 1958.

Table V. Reasons for Going to College Given By High Scoring
High School Girl Graduates in Oklahoma

	From small schools, '57	From Tulsa Central, Lawton, Ponca City, Duncan, 1958
(1.) A college degree is necessary for the kind of work I want to do	21%	19%
(2.) College life will help me develop socially	18%	5%
(3.) I feel that I am capable of going to college and not going would be a waste (not on Questionnaire)		19%
(4.) I will gain in confidence, poise, and insight (not on Questionnaire)		18%
(5.) My parents want me to go	8%	5%
(6.) College graduates earn more	8%	6%
(7.) College will be a good place to meet the kind of person I would like to marry	8%	6%
(8.) I like to study	8%	6%
(9.) I want to find what I am most interested in	8%	5%
(10.) Six other reasons	21%	11%
	100%	100%

Note: Each girl was asked to check three items. Some checked more. Percentages indicated proportions of checked categories.

The economic reasons, "a college degree is necessary for the kind of work I want to do" and "college graduates earn more," ranked high, as was expected. The most enlightening feature of this research was the importance placed on social development (Table V, items 2, 3, and 4.) Apparently, talented girls in Oklahoma value personal social development very highly as a reason for college attendance.

Oklahoma girls emphasized social development more than do girls in the country as a whole. Cole, 1956, reported on a study of high school girls in a nation-wide survey, which included students in the upper 30% in science subjects. His questionnaire and our study for 1957 were closely similar. He found that "social development" ranked fifth with only 8% while we found it to rank second with 18%.

In the 1958 questionnaire, we included the following request: "In a few sentences, tell us what you expect your life to be like fifteen years from now (in 1975) and what you hope you will be doing." Ninety-three per cent indicated in their replies that they wanted a life centered around husband, home, and family. Only 7% mentioned some career as their ambition. Of those hoping for marriage, 54% also indicated an appreciation of a need for a part-time career.

SUMMARY

1. During three consecutive summers, studies were made of girls who had just been graduated from Oklahoma high schools and whose scores were available in science from the Iowa test of Educational Development. The first year, the list consisted of girls with average science scores or better. During the remaining two years, only girls of exceptionally high rank were included in the study, having scores in the upper 20% according to national norms.

2. About one-third did not go to college. Among the high scores, about one-fifth did not go to college. The higher the score, the greater the percent going to college. Also apparently the higher the score the greater number getting married right after graduation from high school.

3. High schools differed greatly in the number of high-ranking girls going on to college. In one school, all the graduates went to college; in another, 41% did not go.

4. Marriage was the main reason for not going on to college, with lack of money coming in second place.

5. Twenty-nine per cent of the exceptionally-gifted group are going to college outside the state of Oklahoma.

6. About one-third of those going to college plan to major in some field of science.

7. The main reason for college attendance among the girls who were highly gifted in science was the desire for personal development along social lines. The career motive was second in importance. These results are in contrast with a nation-wide survey when social development ranked fifth in a similar list of reasons. Oklahoma girls seem to realize that they are women. They do not have the same goals as men.

8. The fantasy which these girls have about their future, fifteen years from the present, centers around husband and family in 93% of the replies and around a career in only 9% of the answers.

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