A STUDY OF HIGH SCHOOL GRADUATES WHO INDICATED BIOLOGY AS THEIR EDUCATIONAL ASPIRATIONS

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CHAPTER I

INTRODUCTION

Past efforts to improve science education have mainly been concerned with teacher preparation, methods, facilities, curriculum improvement, and techniques. There is a trend today toward meeting the needs of the individual through effective guidance and counseling in both secondary schools and college. Today, early in high school the student is expected to choose a career, for which he immediately begins to prepare. Therefore, it is of paramount importance that the guidance and counseling be administered by qualified personnel.

The Problem

In the past few years educators and others active in science areas have noted with concern an apparent drift of young people away from scientific studies and careers.

The drift has been dramatized by demographic trends: the numbers in the age group which feeds the university have taken a down turn. Even in the terms of percentages, the proportion of students in the secondary school "science stream", which prepares them for entrance into the university, has dropped from 42 percent of the total in 1962 to 31 percent of the total in 1967. If the projections prove accurate, the fraction in the "science stream" will be down to a quarter of the total in 1971.

In Britain the effects of the swing are already apparent at the university level, where admission to science and technology faculties declined from 46 percent in 1962 to 40 percent in 1967. On the other hand, demand for places in the arts and especially in the social sciences has been soaring. Admissions to social sciences faculties, expressed as a percentage of total admissions, virtually doubled between 1962 and 1967. At the same time there is talk that some science faculties are hard put to find qualified candidates.

The expansion of science in American society requires that more persons be trained in scientific concepts and techniques. In recent years, however, there has been a decrease in the percentage of students entering fields of science. Several agencies, such as the National Science Foundation and the Oklahoma Frontiers of Science Foundation, actively have been seeking means of encouraging able students to enter fields of science, partly because of the common belief that the "cold war" is largely a struggle for scientific leadership in modern weapons development and other areas of science. Much of the effort to induce young people to enter the science field has been through the expedient of attempting to increase the competency of science teachers and to increase the number of persons interested in science as a career.

Most of the work on problems relating to the development of scientists and science teaching as a career has been done since 1954. Relatively little interest was shown in this problem in the years preceding the Russian "Sputnik" era. Whereas recruitment of scientists now is recognized as a national concern, in the pre-World War II years

teacher recruitment studies were given more emphasis than recruitment in the various areas of science and biology.

Need for the Study

Much time and money have been spent trying to understand the various causes for dropouts, slow learners, and the problems of college attrition in general; however, very little thought has been given to the student who decides to change his major field after two years in the college biology curriculum. More study is also needed concerning the student who ranks very high academically in the science subjects during his high school career and chooses a totally unrelated field as his college career.

Are we in the various areas of science losing the academically superior high school senior to other fields? What caliber of student are we accepting into the various areas of science and biology? Are we spending enough time and money on such items as scholarships and publicity? Are those responsible for advising these students competent advisors; or are they overworked? These are just a few questions which point up the need for a study of this nature.

That the withdrawal of college students is of serious concern to higher education is evident from the views of educators. Shuman (27, p. 347) noted that American colleges and universities are constantly faced with the situation of having approximately 50 percent of their beginning freshmen failing to complete the four-year program. The failure of a disturbing percentage of college students to complete a chosen program of study is a continuing problem.

In spite of the fact that there have been numerous studies concerning the college withdrawal problem, very few are related to the student who chooses to change his major field after one or two years in college. The literature refers to a number of studies which have as their major objective the numerical ratio of withdrawing students to persisting students. These studies do not involve a consideration of the underlying factors which may be contributing to transfer and withdrawal. Almost all of the research concerning the transfer and withdrawal student has involved an attempt to reveal the causal factors from a study of personnel records only.

A study of the available literature impresses the reader with the fact that limited data is available concerning the major curriculum changing student.

The Hypotheses Tested

As indicated in the statement of the problem, the focus of this study will be on the decisions made by a select group of 222 students as recorded on the questionnaire. In interest of brevity, only a limited number of hypotheses will be tested; however, much data will be treated descriptively.

The hypotheses are stated as follows:

1. There will be no significant relationship between the number of high school science courses completed by the student and his present enrollment in the college biology curriculum.
2. There will be no significant difference between the number of males and the number of females dropping out of the biology curriculum.

3. There will be no significant difference in the number of students choosing biology as their major field without the aid of counseling and the number of students choosing biology as their major field with the aid of counseling.
4. There will be no signficant difference in the percentage of students choosing the biology curriculum as a major whose high school graduating class was 100 and over and the percentage of students choosing the biology curriculum whose high school graduating class was less than 100.
5. There will be no significant difference in the number of students changing from the biology curriculum major after enrolling in a state university and the number of students changing from the biology major after enrolling in other state institutions of higher learning.
6. There will be no significant difference in the number of individuals who plan to seek employment in Oklahoma upon graduation from a four-year institution and the number of those who plan to seek employment elsewhere upon graduation from a four-year institution.

The Scope

The subjects involved in this study are 222 1967 high school graduates from various secondary schools throughout the state of Oklahoma. This number is comprised of students who chose biology as their major field upon entering college.

Since student persistence, academic success, and individual adjustment to college life are significant elements of the student attrition

problem, the writer attempted to design a study which would consider these and other elements as they pertain to the biology curriculum.

No attempt will be made to follow those students who persist in the biology curriculum after 1969. Studies repeatedly indicate that the largest withdrawal movement occurs between the second semester of the freshman year and the first semester of the sophomore year (13, p. 268). With this study being made two years following the subjects' graduation from high school, the majority will be juniors in college when checked, and consequently, through this period of greatest student attrition.

Meeting the needs of the individual student has come to the forefront in education today. Therefore, it becomes more important to identify and evaluate the factors most influential to the students' decision-making. It is necessary to first identify and describe these factors before they can be evaluated. This is what this study will try to accomplish.

The Limitations

The writer recognizes and acknowledges certain limiting elements of this study which must be considered.

Whenever a questionnaire of any type is used, it must be assumed that the student has carefully completed it. However, in many student cases responses will be incomplete. It must be assumed, for the purpose of this study, that the form completed by the student is correct.

It is necessary that certain limitations of size, time, and complexity be adhered to in order to keep this study within manageable limits. It is doubtful if all related factors are known. There may be

elements in the students' lives having an impact upon their decision-making and success in college science and biology courses which are not considered in this study.

The value of the questionnaire as an instrument for securing information about students is subject to question; however, it is the writer's opinion that this is the most feasible instrument for this particular study. The writer agrees that students who have withdrawn from college or who never entered college may be less motivated than those who entered college or pursued their chosen vocation as stated in the 1967 questionnaire. Thus, the percentage of returned questionnaires among the group now enrolled in college might be expected to be greater than the percentage of returned questionnaires among the never-enrolled or withdrawal group. A study will be made from those students who returned completed questionnaires.

Definition of Terms

An attempt has been made to refrain from superfluity of word usage in this study. Terms have been used which are relatively common to literature associated with high school seniors and college matriculation. To insure clarity of understanding, however, further explanation is given as to their meaning as it applies to this study.

The term "never-enrolled" refers to the student who indicated in 1967 that he planned to enroll in some college or university in the state of Oklahoma but, for some reason, did not do so.

The terms "withdrawal" and "dropout" both refer to the individual who entered some form of higher education but did not remain.

"Change of major" refers to the student who initially enrolled in a science or biology curriculum as a freshman in college but later changed to an unrelated field.

"Respondent" refers to the individual who returned a completed questionnaire.

CHAPTER II

REVIEW OF LITERATURE

Few issues demanding the critical investigation of personnel in higher education have instigated more extensive research than that of college dropout and presistence. Although much literature cited in this study was published over a decade ago, the writer feels that it is significant to the evaluation of the results.

A Historical Overview

The earliest research related to students withdrawing from college seems to have appeared soon after the beginning of the twentieth century. The major concern of educators through the first two decades was that of how many were being dropped from college and at what point or stage of academic progress the greater percentages of dropout occurred. In the early 1930's, research personnel began to mention a need for investigation of reasons for poor scholarship. Subsequently, there began to appear in the literature dealing with college attrition the term "persistence" when referring to the student's success in adjusting to the demands of college life over a given period of time. The use of this term seems to suggest that colleges were beginning to view the student's potentialities for success rather than studying their abilities to eliminate the student. At no time during this

period did the writer find any literature directly concerned with the students who change their curriculum major after entering college.

Another aspect of the development of such studies throughout the last four decades is the growing interest in an attempt to predict withdrawals by securing attitudes about various activities of college life from college students. Whereas the earlier studies seem to involve simply a counting of dropouts, more recent studies attempt to allow the withdrawing student to evaluate several elements of his life experiences and rank each as to its influence, favorable or unfavorable, upon his decision to withdraw from college (9, pp. 192-194).

In order to view more clearly the method of approach and the results from these investigations, each study will be reviewed separately and in chronological order.

A Survey of Related Studies

One of the earliest attempts to determine causes for college dropout was made in 1928 at Pennsylvania University under the direction of Learned and Longmuir (20, pp. 35-38). Results from this study indicated approximately the same number of students withdrawing as graduating. The period of greatest withdrawal was between the first and second semesters of the freshman year. Reasons for withdrawal in order of frequency were "deficiency," "finances," and "health."

Sparling (32, pp. 63-64) found that "in the average the students choose their vocations at the age of sixteen...only one person in three retained his original choice of vocation." Forty-four percent of the students included in this study admitted that they were influenced by at least one member of their immediate family. Sparling also found

that expected earnings and social acceptability were important factors, whereas work experiences were not closely related to the vocation chosen.

One of the first studies to deal with major curriculum choice as an independent variable was that conducted by Snyder (31, pp. 26-32) at Los Angeles City College. He indicated that the largest group of school leavers came from Liberal Arts curricula. School leavers from the Pre-Teaching Department made up the smallest group. Reasons given for withdrawal were "financial difficulty" as the principle cause, with "lack of interest" as a second cause.

Coffey (5, pp. 269-271) pointed out that a relatively large percent of high school "high achievers" fail in college. Along this same line, Mitchell (23, pp. 95-100) noted that among the freshmen students at Michigan State College who had scored above the median on an admissions achievement test one-third of them had withdrawn from the college by the end of the third year of the matriculation.

Asking students to report their choice of "most important factors influencing vocational choices," Peters (26, p. 430) found that parents, other relatives, and friends ranked first. From this he concluded that the family is the greatest single agency affecting vocational choices of youth.

Of 861 freshmen students at Indiana University who failed to re-enroll as sophomores the following year, Eaton (6, p. 117) reports that 20 percent were from small high schools, 70 percent were from middle-sized high schools, and 10 percent were from large high schools.

In a study conducted by Hilton and Carpenter (13, p. 269) of 3,023 students entering nine Missouri colleges during the two-year

period of 1936 and 1937, 60 percent returned the following year. Only 38 percent began their junior year.

Ginzberg (10, pp. 15-86) reported that occupational decision-making could be analyzed in terms of three periods--fantasy, tentative, and realistic choices. Four variables were chosen for investigation. The first was designated the "reality factors," representing those social and economic forces which determine the individual's environment. The second variable was the influence of the educationl process. The third factor was the emotional determinants, since vocational choices always were made by people who were under the influences of emotional needs and desires. The fourth variable became the role of values in the decision-making process. Upon reviewing this rather extensive research, he concluded that any segmented approach in which individual factors were studied one at a time was bound to be a failure.

Long and Perry (21, pp. 103-105) found graduates of high schools with strong academic emphasis left colleges of technology more readily than did graduates of high schools with general or vocational curriculum emphasis.

Nelson (25, p. 61) reports that among college women in Home Economics, size of college, marriage obligations, and lack of effective guidance and counseling seemed to be related to withdrawal.

The following were listed by Koelsche (18, pp. 357-364) as characteristics common to dropouts: (1) no financial assistance; (2) their fathers are of professional, proprietary, or managerial occupational classification; (3) from average-sized families; (4) active in high school extracurricular activities; (5) from average-sized high schools;

(6) tended to lose interest in college easily; and (7) frequently dropped or changed courses in college.

Berry and Jones (2, p. 477) sought to elicit responses from withdrawing students which would produce factors perceived by them as exerting positive or negative influence on their progress in college. Students perceived parental encouragement, college instruction, and college curriculum offerings as providing positive influence. High school subjects taken and counseling help received in high school were not considered of consequential influence either positively or negatively.

Fulmer (7, p. 446) found that students who had changed their major field of concentration tended to have a better persistence record than those who had not changed their major field.

Academic success in college was found to be related significantly to academic success in high school in research done by Munger (24, p. 243).

Seventy percent of the freshmen dropouts at Syracuse University were very dissatisfied with college academic counseling. According to Holmes (15, p. 297) the most frequently reported reasons for leaving college was a desire to attend another university.

Fultz and Taylor (8, pp. 109-114) pointed out that high schools in general were failing to prepare students adequately for the demands of college study.

Slater (29, pp. 3-8) indicated that a significant relationship exists between persistence and a curriculum choice closely related to father's occupation. Also a significant relationship was shown between persistence and degree of specificity of vocational goal choice.

When dropouts and non-dropouts rate college curriculum, faculty instruction, faculty advisement, counseling services, and availability of degree requirements information, Gehoski and Swartz (9, p. 193) found that dropout rating sheets are more apt to show lower ratings of these services than are shown by rating sheets of non-dropouts. Non-dropouts mentioned more often than did dropouts that home life, social life in college, and religious life in college had been helpful in college experiences.

An Analysis of Related Studies

Research dealing with the satisfactory matriculation in college is extensive yet varied in methodology, characteristics of subjects, and specific factors considered. Subjects have been chosen from various levels of academic progress as well as the colleges from which the various samples are taken represent many different curriculum emphases and vocational training objectives.

In all of the studies reviewed by the writer, there was a pronounced consistency of the nature of the findings. The studies which treated the dropouts quantitatively indicated that approximately one-half of the students who begin a four-year plan of college study do not complete this study. When students are asked to list the factors related to persistence and withdrawal they tend to state them in the following order of frequency: (1) finances, (2) health, (3) poor grades, (4) lack of interest, (5) lack of guidance, and (6) desire to transfer.

A study of the foregoing research literature has indicated that the degree of dropout rate and the period within which the greatest

amount of dropout occurs have remained reasonably constant during the past several years.

CHAPTER III

DESIGN AND METHOD

The selection of a problem having significance to science education was made upon observation of data gathered by the Research Coordinating Unit at Oklahoma State University from high school seniors in Oklahoma during the 1966-67 academic year.

In order to conduct a study of the factors related to withdrawal, transfer, and persistence among college biology students, certain specific procedures were necessary. A sample of subjects consistent with the purpose of the study must be selected. Adequate techniques for securing the necessary data must be designed and selected. Finally, appropriate statistical procedures must be followed in order to determine if any differences indicated were statistically significant.

General Plan

Upon reviewing literature related to science education, the writer noticed a need for more information concerning the science dropout, the student who changes from his original choice of the science or biology curriculum major, and the "swing away from science" in general. This apparent need for more information concerning science education with which to better assist educational planning in Oklahoma made the topic appear feasible.

The records of the responses on a questionnaire given all high school seniors in Oklahoma by the Research Coordinating Unit in 1967 were stored on magnetic tape in the Computer Center at Oklahoma State University. The tapes were run on the computer and the control numbers (student numbers) were printed for those who responded to the questionnaire with biology as their educational aspiration.

The control numbers were used to pull the corresponding test sheets from the 29,789 sheets on file in the office of the Research Coordinating Unit. From these test sheets the addresses were obtained and a questionnaire mailed each student. The initial questionnaire and an addressed and stamped envelope were mailed to each person and a post card followed one week later to those who did not respond, asking them to return the questionnaire. A second letter followed the card by approximately one week urging the ones who did not return the instrument to do so. A second questionnaire was enclosed in case the first had been lost.

The responses to the questionnaire were compiled by the writer and organized for evaluation. The findings of the study were analyzed and conclusions drawn concerning the Oklahoma high school seniors of 1967 who indicated the field of biology as their educational aspiration.

The Population

The population of the study was 222 Oklahoma 1967 high school seniors who indicated biology as their choice of curriculum upon entering college. Their plan to major in biology was evident by those having checked this item in the section titled "Graduates Who Plan Further Education" under the sub-heading "Major in Science Fields"

on the Research Coordinating Unit questionnaire. The questionnaire was sent to 34,580 students and received an 86 percent return of 29,798 responses.

The Instrument, Letter, and Card

The purpose of the investigator's questionnaire was to elicit responses indicative of situations or incidents that have had a favorable or unfavorable influence upon the subject's success in the college biology curriculum. In order to secure such responses it was necessary to devise an instrument which would contain a minimum amount of directed procedures but which would contain sufficiently clear instructions.

The format of the questionnaire consisted of a one-fourth page text briefly explaining the purpose of this study and the importance of their response followed by 31 items in the form of questions or statements. All items were answerable by check mark to simplify the response, thereby, improving participation. The text of the instrument was signed with the writer's signature to give the participant a feeling of individuality and personal importance. Also, written across the top of the instrument in long hand with ink was a note asking the parent to forward this questionnaire to the participant if necessary. This note was informally signed with the writer's given name, "Bob." The University letterhead was used to impress the participant of the importance of the study and to make him feel his answers were important and needed.

A letter and card also were utilized in the gathering of data for this study. The letter was so designed as to promote maximum

response by using University letterhead to indicate legitimate authority. An addressed envelope was enclosed with an actual stamp, with references to the stamp in the letter to enhance the factors of convenience and commitment. The follow-up card and letter were brief, reminding the subject of his lack of response on the original questionnaire and the importance of the research and the fact that he had received a stamped envelope was mentioned again. After one month no further communication was attempted. As returned questionnaires were received, responses to each of the 31 items were tabulated and organized for further treatment.

CHAPTER IV

FINDINGS

It is the purpose of this phase of the study to interpret the results of the investigation at an adequate level of accuracy yet without unnecessarily elaborate techniques. A method of presentation of the results is used which can be followed with a minimum of difficulty. A tally of the answers marked on each item or group of related items on the questionnaire is followed by a brief explanation or discussion. This section is followed by a more specific analysis of the data presented and the application of the results to the related hypothesis. In order to keep this study within manageable limits, a portion of the data is treated descriptively with no hypothesis tested.

The Questionnaire's Data

The following discussion will involve the responses to questionnaire items on all instruments received. It is assumed that the responses to questionnaire items were accurate and representative of the group of individuals from which the population for this study was selected.

As previously stated, the total population of this study was 222 high school graduating seniors. Of the 222 questionnaires mailed, 20 were received marked "Return to Sender" and unopened. Seventy-eight questionnaires received were deemed usable constituting a 35 percent

return. Forty-eight of the respondents were male and 30 were female.

There was no appreciable difference in the average age of the male and female participants. Sixty-two percent of the males were twenty years of age, while 60 percent of the females were twenty years of age. All respondents indicated their age as being either twenty years or twenty-one years.

There was a noticeable difference in the percent of married females and the percent of married males. Sixty percent of the females that were single upon graduation from high school in 1967 were presently single, while 75 percent of the single males in 967 were presently single. Noteworthy is the fact that four percent of the males have married and divorced since their matriculation in college in 1967, while no females incated this as being the case.

Fifty-seven of the respondents ranked themselves in the top quarter of their high school graduating class, while 21 ranked in the lower three quarters. Thirty-six of this group also indicated that they had changed from the biology curriculum major after entering college. Their persistence rate was 37 percent or approximately one to three. Stated differently, 63 percent of the academically superior students choosing the biology curriculum major upon entering college did not persist in it, while 57 percent of those students in the lower three quarters of their graduation class did not persist.

It may be seen in Table I that no significant difference exists between the persistence of the academically superior students and other students.

TABLE I

PERSISTENCE IN THE BIOLOGY CURRICULUM AS COMPARED TO RANK IN GRADUATING CLASS

	Students Ranking in Top 1/4 of Graduating Class	Students Ranking in Lower 3/4 of Graduating Class
Students Not Presently Enrolled in the Biology Curriculum	36 (63%)	12 (57%)
Students Presently Enrolled in the Biology Curriculum	21 (37%)	9 (43%)

78 responses
Chi-square = 0.0492
Phi correlation coefficient = 0.0067

The size of the high school graduating class ranged from eight to over 800 with the average being 258.

There was no appreciable difference in the percent of male respondents and the percent of female respondents who chose biology as their "most liked" subject in high school. They were 72 percent and 70 percent respectively. However, there was a noticeable difference in the percent of respondents who like biology best of all high school courses and those who did not. Seventy percent of all respondents liked biology best of all subjects in high school. This is to be expected considering the population sample of this study. A definite relationship between persistence and liking biology courses was found to exist.

Of all courses liked least in high school, mathematics ranked first with 38 percent. Twenty-eight percent of the respondents indicated they like English least of all high school subjects. Fifty percent of the females liked mathematics least as compared to 30 percent of the males. Thirty-six percent of the males as compared to 20 percent of the females liked English least of all high school subjects.

In Table II it may be seen that a significant number of those enrolling in some form of higher education in 1968 are presently enrolled.

TABLE II

PERSISTENCE IN HIGHER EDUCATION

	Female	Male	Both
Presently Enrolled In Oklahoma	72% (22)	77% (37)	75% (59)
Presently Enrolled In Another State	6% (2)	2% (1)	4% (3)
Presently In Armed Forces	3% (1)	14% (7)	10% (8)
Enrolled But Dropped Out	3% (1)	0 (0)	1% (1)
Never Enrolled	10% (3)	6% (3)	8% (6)

With 65 responding to the item "Have you changed your curriculum major from biology?", 43 indicated they had changed. That is a 67 percent change. Eighty-two percent of the female respondents changed their curriculum major after entering as compared to 57 percent of the males indicating a change. Significantly more females than males changed.

Various reasons were noted for the respondent's changing from the biology curriculum after entering college. In Table III it may be seen that "a general change of interest" ranked first. There were 40 responses to this item.

TABLE III

PERSISTENCE IN THE BIOLOGY CURRICULUM

Reason	Female	Male	Both
A General Change Of Interest	65% (11)	69% (16)	67% (27)
Biology Was Too Difficult	12% (2)	13% (3)	14% (5)
Advised To Change	0 (0)	0 (0)	0 (0)
Other	23% (4)	18% (4)	18% (8)
Total Responses	17	23	40

Forty respondents indicated the specific curriculum major to which they had changed. A tally of these various areas follows in Table IV.

TABLE IV

CURRICULA MAJORS TO WHICH RESPONDENTS CHANGED

Curriculum	Female	Male	Total
Accounting		1	1
Art	1		1
Botany	1		1
Business		3	3
Computer Science		2	2
Elementary Education	1	1	2
Finance		1	1
History		1	1
Home Economics	1		1
Humanities		1	1
Mathematics		1	1
Medical Technology	3	1	4
Nursing	1		1
Political Science		3	3
Psychology		3	3
Pharmacy		1	1
Physical Education	1	1	2
Pre-Med		1	1
Radio and TV	1		1
Sociology	2	2	4
Speech	1		1
Spanish	1		1
Veterinary Medicine		1	1
Zoology	1	1	2
Totals	15	25	40

As a group, the respondents indicated that their choice of vocation was influenced very little by vocational guidance received in

either high school or college. Fifty-five percent did not visit with a counselor in either high school or college. Seventy-seven percent of the respondents did not talk with a college representative at any time. Sixty-five percent of the respondents indicated that they were not influenced by anyone in their choice of the biology curriculum major. Fourteen percent were influenced by their high school biology teacher, while nine percent were influenced by their parents.

Thirty-nine percent of the respondents received financial assistance for their college education from only one source, while 22 percent indicated two sources and 39 percent indicated they received financial assistance from three or more sources. In Table V it may be seen that more students received financial assistance, either completely or in part, from their parents than from any other source. There were 52 responses to this item.

TABLE V

FINANCIAL ASSISTANCE FOR COLLEGE EDUCATION

Source (Completely or in Part)	Percent	Amount
Parents	80%	41
Work	35%	18
Scholarship	33%	17
Savings	20%	10
Other	12%	6

Thirteen respondents indicated they received financial assistance from both working and parents. Of this group, 11 are presently enrolled in some form of higher education. Fourteen respondents indicated they received financial assistance from scholarship plus one other means. Only 10 of these individuals are presently enrolled in some form of higher education.

When asked to define the job level of a biologist, 68 percent of the respondents said that it most nearly resembles that of a researcher. Twenty-two percent said that the job level of a biologist most nearly resembles that of a doctor, lawyer, or teacher.

There were 37 responses to this item. Of the 25 who indicated that the job level of a biologist most nearly resembles that of a researcher, 12 remain enrolled in the biology curriculum. Of the 8 who indicated the job level of the biologist as being more nearly that of the doctor, lawyer, or teacher, only 3 are presently enrolled in the biology curriculum. The one respondent who indicated the job level of the biologist as being most nearly that of the laboratory assistant is presently enrolled in the biology curriculum. Of the 3 who indicated the job level of the biologist as being most nearly that of game ranger, 2 are presently enrolled in the biology curriculum.

After two years in the college biology curriculum, 30 percent of the respondents indicated it as being exactly as they had anticipated upon graduation from high school. Forty-nine percent indicated that it is more than they anticipated while 21 percent indicated it as being less than they had expected.

The Hypotheses Data

This section will present the statistical tests for the six hypotheses listed in the preceding chapter. The limitations and recommendations pertaining to these findings will be presented in Chapter V.

Hypothesis One

There is no significant relationship between the number of high school science courses completed by the student and his persistence in the college biology curriculum.

A chi-square analysis was utilized to compare the number of high school science courses completed by the student with his present status in the college biology curriculum. This analysis considered the students' responses to Item #9 of the investigator's instrument in Appendix A.

There was no significant relationship at the 0.25 level of confidence between the number of high school science courses completed by the student and his present status in the college biology curriculum, therefore, the null hypothesis must be sustained. This analysis indicates that high school students with little or no training in the science areas in high school are equally likely to enroll in the college biology curriculum as those students who had several science courses in high school.

Descriptive results may be seen in Table VI.

Hypothesis Two

There is no significant difference between the number of males and the number of females dropping out of the biology curriculum major.

TABLE VI

PERSISTENCE IN THE BIOLOGY CURRICULUM AS COMPARED TO THE NUMBER OF HIGH SCHOOL SCIENCE COURSES COMPLETED

	Less Than Four Science Courses	Four Or More Science Courses
Students Not Enrolled in the Biology Curriculum	27	32
Students Presently Enrolled in the Biology Curriculum	6	13

78 responses
Chi-square = 1.1856
Phi correlation coefficient = 0.1232

A chi-square analysis was utilized to compare the number of females with the number of males dropping out of the biology curriculum. This analysis considered the students' responses to Item #2 of the investigator's instrument in Appendix A.

Computation indicates no significant difference at the 0.50 level of confidence between the number of females and the number of males dropping out of the college biology curriculum; therefore, the null hypothesis must be accepted.

It may be seen in Table VII that no relationship exists between the sex of the student and persistence in the biology curriculum.

TABLE VII

RELATIONSHIP BETWEEN SEX AND PERSISTENCE IN THE BIOLOGY CURRICULUM

	Male	Female
Presently Enrolled in the Biology Curriculum	12 (32%)	6 (25%)
Not Enrolled in the Biology Curriculum	26 (68%)	18 (75%)

62 responses
Chi-square = 0.3100
Phi correlation coefficient = 0.0705

Hypothesis Three

There is no significant difference in the number of students choosing the biology curriculum major without the aid of counseling and the number of students choosing the biology curriculum major with the aid of counseling.

A chi-square analysis was utilized to compare the number of students in each of the two categories. This analysis considered the students' responses to Items #15 and 16 of the investigator's instrument in Appendix A.

No significant difference was found at the 0.50 level of confidence between the number of students choosing the biology curriculum major without the aid of counseling and those choosing the biology curriculum major with the aid of counseling; therefore, the null hypothesis must

be sustained. These results indicate that students enter the field of biology without regard to counseling received.

Table VIII also shows that 68 percent of those students who enrolled in the biology curriculum without the aid of counseling later withdrew, while 75 percent of those enrolling in the biology curriculum with the aid of counseling later withdrew. This result tends to point up the fact that counseling was not a significant factor in the students' persistence in the biology curriculum.

TABLE VIII

PERSISTENCE IN THE BIOLOGY CURRICULUM
AS COMPARED TO COUNSELING RECEIVED

	Received No Counseling	Received Counseling
Presently Enrolled in the Biology Curriculum	12 (32%)	6 (25%)
Withdrew From the Biology Curriculum	26 (68%)	18 (75%)

62 responses
Chi-square = 0.3100
Phi correlation coefficient = 0.0705

Hypothesis Four

There is no significant difference in the percentage of students presently enrolled in the college biology curriculum whose high school

graduating class was one hundred or over and the percentage of students presently enrolled in the biology curriculum whose high school graduating class was less than one hundred.

A chi-square analysis was utilized to compare these two percentages. This analysis considered the students' responses to Items #3 and 13 of the investigator's instrument in Appendix A.

No significant difference was found at the 0.25 level of confidence; therefore, the null hypothesis that no relationship exists between persistence in the college biology curriculum and size of high school graduating class must be sustained. These results indicate that students who choose the biology curriculum major in college come from high schools of various sizes although it may be seen in Table IX that more, but not significantly more, students with a graduating class of 100 or over tended to transfer or drop out.

TABLE IX

PERSISTENCE IN THE BIOLOGY CURRICULUM AS COMPARED TO HIGH SCHOOL GRADUATING CLASS SIZE

	Graduating Class of 100 or Over	Graduating Class of Less Than 100
Students Not Presently Enrolled in the Biology Curriculum	38 (82%)	24 (75%)
Students Presently Enrolled in the Biology Curriculum	8 (18%)	8 (25%)

78 responses
Chi-sqaure = 0.6708
Phi correlation coefficient = 0.0926

Hypothesis Five

There is no significant difference in the number of students changing from the biology curriculum major after enrolling in a state university and the number of students changing curriculum majors after enrolling in a four-year state college.

A chi-square analysis was utilized to compare the number of students in each of these two types of state institutions of higher learning who change from the biology curriculum major after enrolling. This analysis considered the students' responses to Item #12 of the investigator's instrument in Appendix A.

There was no significant difference at the .05 level of significance between the number of students who changed from the biology curriculum major in a state university and the number of students who changed from the biology curriculum major in a four-year state college. The null hypothesis that no relationship exists between persistence in the biology curriculum and the type of state institution of higher learning attended must be sustained. However, it is noteworthy that a significant difference does exist at the 0.10 level of significance.

It may be seen in Table X that more students who enrolled in the universities dropped or transferred from the biology curriculum than did those who enrolled in a four-year college. These results were significant at the 0.10 level of significance.

Hypothesis Six

There is no significant difference in the number of individuals who seek employment in Oklahoma and the number who seek employment

elsewhere, upon graduation from a four-year institution of higher learning.

TABLE X

PERSISTENCE IN THE BIOLOGY CURRICULUM IN RELATION TO INSTITUTION OF HIGHER LEARNING

	Enrolled in the University	Enrolled in the Four-Year State College
Students Not Presently Enrolled in the Biology Curriculum	22	14
Students Presently Enrolled in the Biology Curriculum	8	14

58 responses
Chi-square = 3.3466
Phi correlation coefficient = 0.2403

There were 32 responses to this item with 15 indicating a desire to seek employment elsewhere, while 17 chose to seek employment in Oklahoma. The binomial test indicated no significant difference at 0.84 level of confidence. A correction continuity was made to strengthen the results. This analysis considered the students' responses to Item #30 of the investigator's instrument in Appendix A.

The null hypothesis that no significant difference exists between the number of individuals seeking employment in Oklahoma and the number

of individuals seeking employment elsewhere after graduation must be sustained. This result indicates that approximately one-half of those educated in Oklahoma seek employment in another state.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The various branches of science, including biology, have become more important in American society during recent years. Scientific research and development have been given increasing recognition as a necessity for economic suvival in the total social structure. Science has graduated from a role of creating gadgets of convenience to a role of developing techniques which are basic to the survival of a free nation. It is becoming increasingly obvious that, to maintain a standard of excellence in the biology curriculum personnel, means must be found to increase the number of competent applicants. In order to insure that a sufficient number of persons become competent biologists, the factors which influence their choice of biology as a career, as well as factors related to their persistence and withdrawal from the biology curriculum need to be known. This dissertation was an attempt to gain information which may serve as a basis for understanding some of these vocational factors and which could serve as a basis for further studies involving larger populations.

Summary of Findings

There was no significant difference in the average age of male and female respondents. All respondents were either twenty or twenty-one

years of age at the time they received the investigator's instrument. However, there was an appreciable difference in the marital status of the male and female respondent. Forty percent of the females as compared to 25 percent of the male respondents had married since their high school graduation in 1967. Only four percent had married and divorced since that time, with these being all males.

Mathematics ranked first of all courses liked least in high school, with positive replies received from 38 percent. Twenty-eight percent liked English least. Results indicated that more females disliked mathematics in high school while English was disliked by more males.

Thirty-six of the 57 respondents who ranked themselves in the top quarter of their high school graduating class indicated they had since changed from the biology curriculum major. This indicates that 63 percent of the academically superior students entering the college biology curriculum transfer or drop out. No significant difference exists between the number of academically superior male and female dropouts. Results indicate that an appreciable number of those enrolling in some form of higher education in 1968 are presently enrolled. Sixty-seven percent of all respondents have changed their curriculum major after entering college. More females than males made the change. "A general change of interest" was the reason given most often for changing. Those respondents indicating a change from the biology curriculum major transferred to 24 different major curricula. Medical technology and sociology ranked first with four each.

The parents of 80 percent of the respondents provided financial assistance either fully or in part. Only 33 percent received financial assistance from some form of scholarship, either fully or in part.

After two years in the college biology curriculum, 49 percent of the respondents indicated it as being more than they had anticipated upon graduation from high school, while 30 percent found it exactly as they had expected. Results indicated that students who chose the college biology curriculum major came from high schools of various sizes throughout the state. No significant relationship exists between the type of institution of higher learning attended and the students' persistence in the biology curriculum.

There was no significant relationship between the number of high school science courses completed by the respondent and his persistence in the college biology curriculum. Also, no significant difference existed between the number of students who chose biology without the aid of counseling and those who had counseling.

The numbers of those seeking employment in Oklahoma and those seeking employment elsewhere upon graduation from a four-year institution of higher learning were found to be nearly equal. Fifty-two percent plan to remain in Oklahoma, while 48 percent plan to seek employment in another state.

Conclusions

Age is not an indicator of persistence in the biology curriculum; however, more females tended to marry between the ages of eighteen and twenty-one and research indicates that a larger percent of these females transferred or dropped out of the biology curriculum. Therefore, these data suggest a definite relationship between marital status of the female and persistence in the biology curriculum.

Results indicated mathematics and English as being the least liked subjects in high school as indicated by the respondents.

More than one-half of the academically superior students entering the college biology curriculum transfer to another curriculum major. They did not seem to drop out of college completely since over 70 percent of those who enrolled in some form of higher education in 1968 are presently enrolled. The reason for most transfers and dropouts being "a general change of interest," as indicated by the respondents, is questionable. It has been found in previous research that students are reluctant to give such personal reasons as low grade point, too hard, and others as why they dropped out or transferred.

In the analysis comparing the number of science courses and persistence in the biology curriculum, no direct relationship was found. Students completing one science course in high school tended to enter the college biology curriculum just as frequently as those students who had four or more science courses in high school.

It was found in the analysis of financial assistance, that more students received financial help from their parents than from any other source.

It was also found that students who received financial assistance both from working and from their parents tend to persist in college more so than those who received financial assistance from other means, including parents alone.

In the analysis comparing counseling with matriculation in the college biology curriculum it was found that no relationship existed. Students seem to enter the college biology curriculum regardless of counseling. This conclusion was reinforced by analysis of the students'

opinions of the biology program after persisting in it for two years. Almost one-half of the respondents indicated it as being more than they had expected upon graduation from high school.

The results on the item "define the job level of the biologist" show the respondents to be confused as to what kind of profession they are preparing themselves for.

Implications

Certain inferences can be made with reasonable confidence from the results of this study. It would seem that some of the factors considered did exert an influence on the degree of persistence of the subjects under study.

From the analysis of counseling and persistence it appears that they are directly related, while counseling and matriculation in the biology curriculum is not related. Students need better quality counseling concerning their choice of biology as a career after graduating from high school.

The number of students receiving financial assistance from their parents would seem to indicate that the parent is presently responsible for the larger part of the student's college finances.

Better coordination and integration of college and high school procedures and methods are needed, as indicated by the number of academically superior students who transfer out of the college biology curriculum after matriculation.

Recommendations

As the results of this study are reviewed it becomes apparent that much more extensive investigation is needed to identify factors related to the college biology curriculum matriculation, persistence, and dropout. Although the findings of this study are helpful and tend to support the results of other research such as that of Munger and Fulmer, they also tend to dispute earlier research such as that done by Fultz and Taylor on occasion. It is the desire of the writer that this research contribute to a greater incentive for continued investigation.

This study supports the view that more of the financial burden of higher education is put upon the parents. Financial assistance from sources such as industry, state and federal grants, loans, and scholarships need to be more thoroughly investigated.

It is possible since the freshman year in college is a period of adjustment, that a study conducted during the second semester of the junior year or the senior year might indicate a somewhat different result as to persistence, dropouts, and transfers in the biology curriculum. There are many factors not considered in this study that may contribute to scholastic performance, and ultimately to persistence or dropout. Some of these are: the familiarity of students with teaching methods employed; the method of preparation for class participation; the amount of time given to study; and study habits in general. An extensive study of the possible influences of some of these factors would seem feasible.

The critical problem of college attrition in the various major curricula is one that will evidently continue to present itself to college administrators in the years to come. As colleges and

universities tend to adjust their curriculum and instructional programs to the needs and backgrounds of students, these institutions will find necessary a much greater concern for the social, emotional, and the educational adjustment of the individual student. Thus, continuous research designed to identify personality characteristics, cultural values, and individual behavior patterns which relate to college success can be justified.

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APPENDIX A

THE INSTRUMENT

A STUDY OF HIGH SCHOOL GRADUATES WHO INDICATED BIOLOGY AS THEIR EDUCATIONAL ASPIRATIONS

Vocational Research Coordinating Unit
Oklahoma State University
Stillwater, Oklahoma

October 20, 1969
Name_____
Address_____
_____
_____

May we ask for a few minutes of your time?

In 1967, while a senior in high school, you indicated an interest in biology as your major in college. Would you please help us once again by answering the following questions? Your response will be important in the successful completion of this statewide study currently in process at Oklahoma State University.

The results of this study will be made available to educators in both high school and in college so they may better assist graduating high school seniors in the future.

We are counting on you. Please take a few minutes to answer this questionnaire. Enclose it in the pre-addressed, stamped envelope and mail it now.

This study is confidential. Your name will not be used in any publication or report.

THANK YOU for your assistance.

Bob J. Piguet

DIRECTIONS: Please check (x) all questions where applicable.

1. Age ____

2. Sex
   1. ____Male
   2. ____Female

3. Approx. how many were in your high school graduating class? _____

4. Marital Status
   1. ____Married in 1967
   2. ____Single in 1967
   3. ____Married now
   4. ____Single now
   5. ____Divorced now

5. Where did you rank in your high school graduating class?
   1. ____Top quarter of class
   2. ____Second quarter of class
   3. ____Third quarter of class
   4. ____Bottom quarter of class
   5. ____I don't know my rank

6. What is the size of the town in which you last attended high school?
   1. ____Less than 1000
   2. ____At least 1000 but less than 5000
   3. ____At least 5000 but less than 10,000
   4. ____At least 10,000 but less than 20,000
   5. ____At least 20,000 but less than 50,000
   6. ____At least 50,000 but less than 100,000
   7. ____At least 100,000

7. Which high school subject did you like best?
   1. ____Mathematics
   2. ____Biology
   3. ____Chemistry
   4. ____English
   5. ____History and Gov't.
   6. ____Other _____ Specify

8. Which high school subject did you like least?
   1. ____Mathematics
   2. ____Biology
   3. ____Chemistry
   4. ____English
   5. ____History and Gov't.
   6. ____Other _____ Specify

9. Check all of the following science courses that you completed in high school.
   1. ____General Science
   2. ____General Biology
   3. ____Advanced Biology
   4. ____Physiology
   5. ____Chemistry
   6. ____Physics
   7. ____Other _____ Specify

10. What is the highest education degree you expect to complete?
   1. ____High school diploma
   2. ____Certificate of completion
   3. ____Associate degree
   4. ____Bachelor's degree
   5. ____Master's degree
   6. ____Doctor's degree

11. Where did you first enroll after high school graduation?
   1. ____Junior college
   2. ____4-year state college
   3. ____University
   4. ____Nowhere: Why? _____

Why? (to number 11)
   1. ____Close to home
   2. ____Financial
   3. ____Better program
   4. ____Other _____ Specify

12. Are you presently enrolled in a college in Oklahoma?
   1. ____Yes; 4-year state college
   2. ____Yes; Junior college
   3. ____Yes; University
   4. ____Other _____ Specify
   5. ____No; not enrolled at all
   6. ____No; but in another state
   7. ____No; Armed Forces
   8. ____Enrolled but dropped out

If you answer to No. 12 is No, (5, 6, 7, or 8) please insert form in envelope and mail. Thank You.

If your answer to No. 12 is Yes, please continue.

13. Have you changed your major from Biology (as you indicated in 1967 questionnaire)?
1. ____Yes
2. ____No

13a. If your answer to No. 13 is yes, why?
1. ____Financial
2. ____Changed to an easier major
3. ____Biology is not what I expected
4. ____General change of interest
5. ____Advised to change by my college advisor
6. ____Other _____
Specify

14. What is your present major?
_____

If your major is some other than Biology or a related field, please insert form in envelope and mail it. Thank You.

If your major is Biology or a related field, please continue.

15. Did you visit with a counselor about possibilities of Biology as your major field?
1. ____Yes, a school counselor
2. ____Yes, another counselor
3. ____No

16. If you visited with a counselor what did he tell you about Biology as your major?
1. ____He never talked to me about the program
2. ____He generally warned me not to enroll in the program
3. ____He generally encouraged me to attend the program
4. ____He told me about the program but neither encouraged nor discouraged me from attending

17. When did you first decide to major in biology?
1. ____While in junior high
2. ____While in 10th or 11th grade
3. ____While a senior in high school
4. ____During the summer before I enrolled in college

18. Did a representative from a college talk with you at your school about this program?
1. ____Yes
2. ____No

19. Who influenced you most in your decision to major in biology?
1. ____Parents
2. ____Relative(s)
3. ____Friends about my age
4. ____A previous employer
5. ____Friends of the family
6. ____Counselor in high school
7. ____Biology teacher
8. ____Other teacher
9. ____Nobody, I decided all by myself
10. ____Other _____
Specify

20. How far is the town in which you last attended high school from the college you are now attending?
    1. ____They are one and the same
    2. ____Less than 25 mi.
    3. ____At least 25 but less than 50 mi.
    4. ____At least 50 but less than 100 mi.
    5. ____At least 100 but less than 200 mi.
    6. ____More than 200 mi.

21. When do you attend your program?
    1. ____Full-time
    2. ____Part-time day
    3. ____Part-time night

22. From whom have you received financial assistance since you started this program?
    1. ____Parents
    2. ____Spouse
    3. ____Part-time employment
    4. ____Student loan
    5. ____Scholarship
    6. ____Savings
    7. ____Other _____
       Specify

23. How confident are you that you will complete this program?
    1. ____Very confident - no doubt
    2. ____Confident - probably
    3. ____Unsure - may or may not depending on finances
    4. ____Unsure - may or may not depending on other events
    5. ____Doubtful - probably not finish
    6. ____Very doubtful - I plan to quit and find a job

24. What is your present classification?
    1. ____Freshman
    2. ____Sophomore
    3. ____Junior
    4. ____Senior

25. Which of the following occupations most nearly describes the job level of a biologist?
    1. ____Doctor, lawyer or teacher
    2. ____Laboratory assistant
    3. ____Research
    4. ____Game ranger

26. What job title do you expect to have upon employment at your next job?
    1. ____Field Biologist
    2. ____Teacher
    3. ____Research Biologist
    4. ____Microbiologist
    5. ____Other _____
       Specify

27. At this point in your preparations for a career in biology, is a biology major the same as you anticipated upon your graduation from high school?
    1. ____Yes, exactly the same
    2. ____No, more than I expected
    3. ____No, less than I expected

28. When will you be available for employment?
    1. ____1970, degree_____
    2. ____1971, degree_____
    3. ____1972, degree_____
    4. ____1973, degree_____
    5. ____1974, degree_____
    6. ____Now, degree_____

29. Upon completion of this program, what do you plan to do?
    1. ____Continue my education
    2. ____Seek employment as a teacher
    3. ____Seek employment
       _____
       Specify
    4. ____Enter military service
    5. ____Other _____
       Specify

30. If you expect to seek employment upon completion of this program, where do you prefer to work?
    1. ____In Oklahoma
    2. ____In another state
    3. ____I have no preference

31. Where do you expect to find your best opportunity for employment (salary, etc.)?
    1. ____In Oklahoma
    2. ____In another state
    3. ____I don't know

THANK YOU for completing this questionnaire. Please mail promptly.

APPENDIX B

CARD AND LETTER USED IN THE STUDY

FOLLOW-UP CARD

JUST A REMINDER!!

A few days ago you received an important questionnaire dealing with post high school education, which you were asked to complete and return in the enclosed self-addressed and stamped envelope.

If you have already returned the questionnaire, please accept our thanks. If not, won't you please do so at once? REMEMBER, only YOU can give us the true information we need. Thank you for your assistance.

Bob J. Piguet
Vocational Research Unit
OSU, Stillwater,
Oklahoma

RCU VOCATIONAL RESEARCH COORDINATING UNIT

Oklahoma State University
Stillwater, Oklahoma 74074
Classroom Building 402
AC 405, 372-6211
Extension 6204

Office of the Director

November 12, 1969

HELP! HELP! HELP!

Recently you received a questionnaire designed to gather information that will help us design schools and programs for you and other high school graduates in the future.

We are genuinely interested in your activities since your graduation from high school and YOU are the only one that can give us the TRUE facts. PLEASE take a few minutes to complete the questionnaire and mail it in the addressed and stamped envelope provided.

If you have already mailed your questionnaire, please accept our thanks.

Another questionnaire is enclosed in case the first one has been misplaced.

THANK YOU for assisting in this important project.

Sincerely,

Bob J. Piguet

BP:ph

APPENDIX C

THE RESEARCH COORDINATING UNIT QUESTIONNAIRE

INSTRUCTIONS

The survey instrument we are asking you to complete is an endeavor to discover what kinds of plans high school seniors have for the future — and how educators can assist youth in making their plans succeed. Please read directions carefully before you begin.

Every student should answer questions 1 through 35.

Those who plan further education this summer or fall (or following military service) should answer questions 36 through 50. **Do not** answer questions 51 through 61.

All other students (those who do not plan further education) answer questions 51 through 61. **Do not** answer questions 36 through 50.

All students fill out questions 62 through 74.

FILL OUT ALL QUESTIONS AS REQUIRED ABOVE, MARKING "NOT APPLICABLE" IF NECESSARY.

DIRECTIONS FOR MARKING ANSWER SHEET

1. Be sure that the answer sheet number you are marking corresponds with the item number in the booklet. **DO NOT MARK MORE THAN ONE ANSWER ON EACH LINE.**
2. The answer sheet should be marked with an ordinary pencil. Do not use a pen. Corrections can be made by erasing carefully and completely.
3. Marks should not "stray" beyond the limits of an answer space. a **b** c

   The example might be read as both "b" and "c" by the optical scanner which will be used to read your answers.

Sample:

Booklet	Answer Sheet
0. My age is: a. 16 b. 17 c. 18	0. a **b** c d e f g h i j

A student who is 17 years old would mark "b" as shown in the sample.

Sample:

BOOKLET

22-23. What factor is most responsible for your being a senior?

aa. Desire to gain knowledge	ag. Teachers who understand student problems
ab. Desire to graduate	ah. Athletics, school activities
ac. Social life of school	ai. National Youth Corps Program
ad. School attendance laws	aj. Desire to succeed in today's world
ae. Parents' insistence	ba. "all my friends go to school"
af. Work Study Program	bb. "don't know," or other reason

ANSWER SHEET

22. **a** b c d e f g h i j

23. a **b** c d e f g h i j

Some of the responses require more than one mark on the answer sheet. An example is number 22-23. on page 3 in the booklet. In order to answer this question, you must mark the first letter of your desired response on the answer sheet line No. 22., and the second letter of your response on the answer sheet line No. 23.

"Desire to graduate", which is "ab" in the booklet, is marked in the sample above. Make sure you understand how to answer questions of this type.

Other questions which require answers of two marks are: 24-25.; 39-40.; 69-70.; 71-72.; and 73-74.

MY PLANS BEYOND HIGH SCHOOL

1. Age: a. 15 b. 16 c. 17 d. 18 e. 19 f. 20 g. 21 h. 22 or older

2. Sex: a. Male b. Female

3. Race: a. Indian b. Negro c. White d. Other

4. Marital Status: a. Single b. Married c. Separated (or divorced)

5. I plan (this fall);
   a. To continue going to school
   b. To get a job
   c. To become an apprentice
   d. to go into military service
   e. To work at my home
   f. I have no definite plans
   g. Other (specify on back of answer sheet on line No. 5)

6. If the plan you checked is not what you would really like to do, check the following statement: I would like:
   a. To continue going to school
   b. To get a job
   c. To become an apprentice
   d. To go into military service
   e. To work at my home
   f. To have no definite plans
   g. Other (Specify on back of answer sheet)
   h. Not applicable

7. To what extent have you discussed your plans with your teachers or counselor?
   a. Not at all b. Some c. Quite a bit

8. To what extent have you discussed your plans with your parents?
   a. Not at all b. Some c. Quite a bit

9. To what extent have you discussed your plans with friends your age?
   a. Not at all b. Some c. Quite a bit

10. To what extent have you discussed your plans with an adult who is in the occupation you desire to enter: a. Not at all b. Some c. Quite a bit

11. Has marriage or the early prospect of marriage influenced your plans for next year?
    a. Yes b. No

12. The pospect of military service: (boys only)
    a. Has influenced me to attend college and join the ROTC
    b. Has made me uncertain about my future plans
    c. Has caused me to plan a military career
    d. Has had no influence upon my plans
    e. Not applicable (girl)

13. The fact that boys must go into military service: (girls only)
    a. Has made me uncertain about my future plans
    b. Has had no influence upon my decisions
    c. Has caused me to plan to enter military service also
    d. Not applicable (boy)

14. My parents:
    a. Want me to go to college
    b. Want me to go to work
    c. Want me to do neither
    d. Do not care which I do
    e. Do not care what I do
    f. Not applicable

READ THE FOLLOWING BEFORE YOU ANSWER ITEMS 15 THROUGH 18:

State of Oklahoma requirements for graduation include the following required subjects from the ninth

grade through the twelfth grade: 8 credits (semesters) of English or its equivalence, 2 credits in Math, 2 credits in Science, 2 credits in American History, and 1 credit in Oklahoma History. **Do not** count credits you have earned to meet these requirements when answering items 15 through 18. **Do** count credits you expect to earn this semester (except in meeting above requirements).

15. Not counting the above required credits, in what **academic** subject area have you completed the most credits?
    a. Communication (Speech, Drama, Journalism, etc.)
    b. Social Studies (History, Geography, Sociology, Psychology, etc.)
    c. Mathematics
    d. Science (Biology, Physics, Chemistry, etc.)
    e. Foreign Language
    f. Fine Arts (Music, Art, etc.)
    g. None of the above

16. How many credits do you have in the subject area selected above?
    a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable

17. In what area did you complete the next largest number of credits?
    a. Communication
    b. Social Studies
    c. Mathematics
    d. Science
    e. Foreign Language
    f. Fine Arts
    g. None of the above

18. How many credits do you have in that subject area?
    a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable

19. In what **vocational** field have you received the most credits?
    a. Agriculture
    b. Business (Typing, Shorthand, Bookkeeping, etc.)
    c. Distributive Education (D. E.)
    d. Home Economics
    e. Technical Education (Electronics, Drafting, Technical Chemistry, etc.)
    f. Trades and Industrial Education (Auto Mechanics, Cosmetology, etc.)
    g. None of the above, no vocational course, etc.

20. How many credits do you have in the vocational field checked above?
    a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable

21. What is your grade average (approximately) from grades nine through twelve?
    a. A b. A— c. B+ d. B e. B— f. C+ g. C h. C— i. D+ j. D or lower

22-23. What factor is most responsible for your being a senior?
    aa. Desire to gain knowledge
    ab. Desire to graduate
    ac. Social life of school
    ad. School attendance laws
    ae. Parents' insistence
    af. Work Study Program
    ag. Teachers who understand student problems
    ah. Athletics, school activities
    ai. National Youth Corps Program
    aj. Desire to succeed in today's world
    ba. "all my friends go to school"
    bb. "don't know," or other reason

24-25. What factor do you think is most responsible for school dropouts?
    aa. Lack of interest
    ab. Illness
    ac. Financial need
    ad. Lack of ability
    ae. Attendance
    af. School curriculum
    ag. Family attitude toward school
    ah. Non-acceptance by students
    ai. Non-acceptance by teachers
    aj. Romantic interest, marriage
    ba. To get away from home (dropout is secondary)
    bb. Family responsibilities

26. Would you have have dropped out if you could? a. Yes b. No

27. Do you have any physical disabilities? a. Yes b. No (If yes, please specify on back of answer sheet on line No. 27)

28. If yes, have you had contact with the Oklahoma Vocational Rehabilitation Division for aid in vocational training, etc.? a. Yes b. No

29. What is the highest level of education your father attained?
    a. less than high school
    b. attended high school
    c. graduated from high school
    d. attended trade or business school
    e. attended college
    f. graduated from college
    g. has master's or doctor's degree
    h. "don't know"

30. What is the highest level of education your mother attained?
    a. less than high school
    b. attended high school
    c. graduated from high school
    d. attended trade or business school
    e. attended college
    f. graduated from college
    g. has master's or doctor's degree
    h. "don't know"

31. What is the highest level of education your oldest brother (older than you) has attained?
    a. less than high school
    b. attended high school
    c. graduated from high school
    d. attended trade or business school
    e. attended college
    f. graduated from college
    g. has master's or doctor's degree
    h. "don't know"
    i. Not applicable, no older brother

32. What is the highest level of education your oldest sister (older than you) has attained?
    a. less than high school
    b. attended high school
    c. graduated from high school
    d. attended trade or business school
    e. attended college
    f. graduated from college
    g. has master's or doctor's degree
    h. "don't know"
    i. not applicable

33. My father is engaged in the following occupation:
    a. Office work (cashier, clerk, bookkeeper, etc.)
    b. Professional (doctor, lawyer, minister, teacher, etc.)
    c. Executive (manages large business, industry, firm)
    d. Laborer (janitor, farm hand, plumber's helper, waiter, truck driver, etc.)
    e. Salesman (insurance, real estate, auto, store, etc.)
    f. Skilled work (mechanic, welder, appliance serviceman, etc.)
    g. Owns, rents, manages small business (store, station, cafe, etc.)
    h. Owns, rents, manages farm or ranch
    i. Military service
    j. Disabled, retired, deceased, "don't know"

34. My mother is engaged in the following occupation:
    a. Office work
    b. Professional
    c. Executive
    d. Laborer (waitress, etc.)
    e. Saleslady
    f. Skilled work
    g. Owns, rents, manages small business
    h. Owns, rents, manages farm or ranch
    i. Housewife
    j. Disabled, retired, deceased, "don't know"

35. In terms of income or wealth in my community, I think my family is:
    a. considerably above average
    b. somewhat above average
    c. average
    d. somewhat below average
    e. considerably below average

STUDENTS WHO PLAN TO CONTINUE THEIR EDUCATION OR TRAINING THIS FALL, OR FOLLOWING MILITARY SERVICE ANSWER QUESTIONS 36 THROUGH 50.

36. I plan next year to go to the following kind of school beyond high school:
    a. Vocational or technical school
    b. Junior college
    c. Four-year college
    d. Business college
    e. Liberal Arts college
    f. University
    g. "I don't know yet"

37. Is the school public supported? a. Yes b. No. c. Not applicable

38. Is the school in Oklahoma? a. Yes b. No c. Not applicable

39-40. I plan to major in:

SCIENTIFIC FIELDS

aa. Anatomy
ab. Anthropology
ac. Archaeology
ad. Astronomy
ae. Biology
af. Botany
ag. Chemistry
ah. Entomology
ai. Geography
aj. Geology
ba. Genetics
bb. Mathematics & Statistics
bc. Oceanography
bd. Physics
be. Physiology
bf. Zoology

MEDICAL FIELDS

bg. Dental Hygiene
bh. Dentistry
bi. Dietetics
bj. Medicine
ca. Mortuary Science
cb. Nursing
cc. Occupational Therapy
cd. Optometry
ce. Osteopathy
cf. Pharmacy
cg. Physical Therapy
ch. Veterinary Medicine

ARTS AND HUMANITIES

ci. Art & Sculpture
cj. Architecture
da. Creative Writing
db. Drama & Theater
dc. English & Literature
dd. Foreign Language
de. Journalism
df. Radio - TV - Communications
dg. Music
dh. Philosophy
di. Speech
dj. Other Arts & Humanities

SOCIAL, RELIGIOUS & EDUCATIONAL FIELDS

ea. Counseling & Guidance
eb. Education Administration
ec. Elementary Education
ed. Home Economics
ee. Library & Archival Science
ef. Physical Education
eg. Psychology
eh. Secondary Education
ei. Social Science
ej. Social Work
fa. Sociology
fb. Special Education
fc. Theology & Religion

ADMINISTRATIVE, POLITICAL & PERSUASIVE

fd. Advertising
fe. Business Administration
ff. Law
fg. Industrial Relations
fh. Merchandising & Sales
fi. Military
fj. Political Science & Government
ga. Public Administration
gb. Public Relations

BUSINESS & FINANCE

gc. Accounting
gd. Business & Commerce
ge. Economics
gf. Finance
gg. Secretarial Science

ENGINEERING, AGRICULTURE AND TECHNOLOGY

gh. Agriculture
gi. Engineering
gj. Engineering Technology
ha. Fish & Game Management
hb. Forestry
hc. Industrial Arts
hd. Skilled Trades
he. Soil Conservation Work
hf. Other field not listed here
hg. "I don't know yet"

41. I would prefer to attend the following kind of school beyond high school if it were located within commuter distance of my home:
    a. Vocational or Technical school
    b. Junior college
    c. Four-year college
    d. Business college
    e. Liberal Arts college
    f. University
    g. Not applicable

42. Did you take the National Merit Scholarship Exams? a. Yes b. No

43. Did you take the CEEB (College Entrance Board Exams)? a. Yes b. No

44. Did you take the ACT (American College Tests)? a. Yes b. No

45. What part of your first year expenses do you expect to provide from summer earnings or part time work at school?
    a. Less than $250
    b. Between $250 and $500
    c. Between $500 and $750
    d. More than $750
    e. None, not applicable
    f. "don't know"

46. How do you estimate the ability of your parents to help you go to college?
    a. Can easily afford it
    b. I must pay my own way
    c. Can afford it, with sacrifices
    d. Can help, but I will have to earn part

47. Would you borrow money for educational expenses if you could pay it back on the installment plan after leaving college?
    a. Yes b. No. c. "don't know"

48. In which of the following college-type experiences have you had the most practice in high school?
    a. Taking notes from lectures
    b. Writing term reports
    c. Taking final semester examinations during a scheduled test period
    d. Making individual studies with oral reports
    e. Long-term assignments
    f. Planning own use of study time rather than required study period
    g. Use of library
    h. Other (Please specify on back of answer sheet on line No. 48)
    i. None, no other, etc.

49. In which of the above have you had the next most practice in High School?

50. In which of the above have you had the next most practice in High School?

STUDENTS WHO PLAN TO ENTER THE WORLD OF WORK ANSWER QUESTIONS 51 THROUGH 61.

51. a. I have applied, but do not have a job.
    b. I have not applied for a job but plan to do so.
    c. I have applied and have been accepted for a job.
    d. I will continue in a job I now have.

52. I would like a job as: (Specify particular occupation on back of answer sheet)
    a. Office work
    b. Professional
    c. Executive
    d. Laborer
    e. Sales
    f. Skilled work
    g. Own, rent or manage small business
    h. Own, rent or manage farm or ranch
    i. Other
    j. Not applicable, have a job

53. I would expect to earn, per week, at least:

a. $15 to $30
b. $30 to $45
c. $45 to $60
d. $60 to $75
e. $75 to $90
f. $90 to $105
g. $105 to $120
h. $120 or more
i. Not applicable

54. I have, or will continue a job as: (Specify on back of answer sheet)

a. Office work
b. Professional
c. Executive
d. Laborer
e. Sales
f. Skilled work
g. Own, rent or manage small business
h. Own, rent or manage farm or ranch
i. Other
j. Not applicable, don't have a job

55. I will earn, per week, about:

a. $15 to $30
b. $30 to $45
c. $45 to $60
d. $60 to $75
e. $75 to $90
f. $90 to $105
g. $105 to $120
h. $120 or more
i. Not applicable

56. I have contacted the State Employment Service for help in getting a job.

a. Yes b. No

57. If I wanted to continue my education or training, my parents could:

a. Easily afford to pay my educational expenses
b. Pay my expenses by sacrificing
c. Be able to help with part of my expenses
d. Give me no help at all

58. I would be interested in attending the following kind of school beyond high school if it were located within commuter distance of my home:

a. Vocational or Technical school
b. Junior college
c. Four-year college
d. Business college
e. Liberal Arts college
f. University
g. Not applicable

59. Have you ever considered continuing your education or training?

a. Yes b. No

60. If no, would you consider it if you had the money? a. Yes b. No c. "don't know"

61. Would you borrow money for educational expenses if you could pay it back on the installment plan after finishing further education or training?

a. Yes b. No c. "don't know"

LONG RANGE PLANS (All students answer)

62. If you are going to military service, what do you plan to do after fulfilling service requirements?

a. Continue my education
b. Get a job
c. Remain in the service and make it a career
d. "I don't know"
e. Not applicable

63. If you are going to work, do you plan to resume your education or training in the future?

a. Yes, go to college when money is available
b. Yes, go to college when time is right
c. Yes, go to vocational school at a later date
d. No, get my education on the job
e. No, become a housewife
f. Not applicable

64. I hope eventually to be in the following vocation. (Specify particular occupation on back of answer sheet.)

a. Office work
b. Professional
c. Executive
d. Laborer
e. Sales
f. Skilled work
g. Own, rent or manage small business
h. Own, rent or manage farm or ranch
i. Housewife
j. Other

65. For the vocation I checked above, further education or training is:

a. Necessary b. Desirable c. Unnecessary

66. In which of the following vocational experiences have you had the most practice in high school?

a. On-the-job training
b. Office practice or other in-school clerical training
c. A skill class which includes shop or actual work experience (welding, auto mechanics, carpentry, cosmetology, etc.)
d. School vocational clubs
e. Record keeping
f. Public speaking
g. Occupational study and observation
h. Project ownership
i. Other (Specify on back of answer sheet)
j. None, or no other

67. In which of the above vocational experiences have you had the next most practice in high school?

68. In which of the above vocational experiences have you had the next most practice in high school?

69-70. Which of the following statements best describe your decision about future plans? (Check the one statement which seems most important to you.)

aa. I would rather start earning money quickly, and learn on the job.
ab. I (am) would be greatly dissatisfied to stop at my present level of knowledge.
ac. College life and activities (like athletics) attract me very much.
ad. College graduates get jobs with better pay.
ae. The country needs more people who have highly developed skills and knowledge.
af. College is a good place to meet a worthy life-mate.
ag. Skilled workers get paid as much as most college graduates.
ah. Further education beyond high school enables you to study more lines of work before deciding on a career.
ai. Further education helps you live a happier, more complete life.
aj. Studies beyond high school will make you work at a high intellectual level, and I like that.
ba. Getting further education costs more than it is worth.
bb. College graduates usually have the leadership positions.
bc. Learning on a job is more practical than most school learning.
bd. Persons who do not have college educations often make better leaders.
be. College life broadens you socially, and develops your personality.
bf. Success in life depends upon ability and effort, not amount of education.
bg. Getting further education would be a waste of time for me.
bh. Getting further education beyond high school has just been accepted; I have never thought of anything else.
bi. Further education is necessary for entry into my vocation.

71-72. Which of the statements above seem next most important to you?

73-74. Which of the statements above seem next most important to you?

APPENDIX D

SUMMARY REPORT: STATE-WIDE RESULTS OF THE STUDY, "PLANS OF HIGH SCHOOL SENIORS, 1967"

Summary Report: STATE-WIDE RESULTS OF THE STUDY, PLANS OF HIGH SCHOOL SENIORS, 1967

Total 1967 High School Graduates in Oklahoma ---------- 34,580
Total respondents (usable returns) to the questionnaire ---------- 29,798
Percentage---86%

Item	Number	Percent[1]
AGE (29743) *		
15	16	.05
16	235	.79
17	17,631	59.28
18	10,520	35.37
19	1,132	3.81
20	143	.48
21+	62	.20
SEX (28942)		
Male	15,223	52.60
Female	13,710	47.37
RACE (29620)		
Indian	920	3.11
Negro	1,654	5.58
White	26,934	90.93
Other	108	.36
MARITAL STATUS (29614)		
Single	28,493	96.21
Married	977	3.30
Separated or divorced	138	.47
PLANS THIS FALL (29397)		
Go to school	20,255	68.90
Get a job	4,381	14.90
Become an apprentice	204	.69
Go to military service	1,637	5.57
Work at home	384	1.31
No plan	2,025	6.89
Other	511	1.74
REAL DESIRE FOR THIS FALL (27237)		
Go to school	10,995	40.37
Get a job	3,453	12.68
Become an apprentice	264	.97
Enter military service	1,091	4.01
Work at home	486	1.78
To have no plans	783	2.87
Other	333	1.22
Not Applicable	9,832	36.10

[1]Percent does not always equal 100% because of unusable answers.

*Total usable answers for the question.

Item	Number	Percent
DISCUSSED PLANS WITH TEACHERS OR COUNSELORS	(28844)	
Not at all	9,613	33.33
Some	15,638	54.22
Quite a bit	3,593	12.46
DISCUSSED PLANS WITH PARENTS (29238)		
Not at all	930	3.18
Some	8,778	30.02
Quite a bit	19,530	66.80
DISCUSSED PLANS WITH PEERS (29045)		
Not at all	1,051	3.62
Some	11,550	39.77
Quite a bit	16,442	56.61
DISCUSSED PLANS WITH ADULT IN OCCUPATION (28995)		
Not at all	10,703	36.91
Some	12,965	44.71
Quite a bit	5,323	18.36
HAS MARRIAGE INFLUENCED PLANS? (28335)		
Yes	5,403	19.07
No	22,928	80.92
INFLUENCE OF PROSPECTS OF MILITARY SERVICE ON BOYS (14993)		
Attend college w/ROTC	2,389	15.93
Made Uncertain	5,201	34.69
Plan military career	946	6.31
No influence	6,457	43.07
INFLUENCE OF BOYS PROSPECTS OF MILITARY SERVICE ON GIRLS PLANS (14564)		
Made uncertain	2,513	17.25
No influence	11,703	80.36
Enter service also	348	2.39

Item	Number	Percent
WHAT PARENTS WANT YOU TO DO (29501)		
Go to college	23,138	78.43
Go to work	2,138	7.25
Do neither	390	1.32
Don't care which	1,991	6.75
Don't care what	935	3.17
Not applicable	906	3.07
ACADEMIC AREA IN WHICH YOU COMPLETED MOST CREDITS (29206)		
Communication	1,657	5.67
Social Studies	7,798	26.70
Math	5,807	19.88
Science	3,791	12.98
Foreign Language	2,232	7.64
Fine Arts	3,140	10.75
None of above	4,781	16.37
NUMBER OF CREDITS IN AREA SELECTED ABOVE (29365)		
1 or 2	3,139	10.69
3 or 4	8,669	29.52
5 or 6	7,081	24.11
7 or 8	4,983	16.97
9+	1,798	6.12
Not Applicable	3,695	12.58
ACADEMIC AREA, NEXT MOST CREDITS (29195)		
Communication	1,456	4.99
Social Studies	5,658	19.38
Math	6,147	21.05
Science	5,836	19.99
Foreign Language	2,338	8.01
Fine Arts	1,825	6.25
None	5,932	20.32
NUMBER OF CREDITS (29055)		
1 or 2	5,880	20.24
3 or 4	10,138	34.89
5 or 6	5,270	18.14
7 or 8	2,163	7.44
9+	491	1.69
Not applicable	5,113	17.60
VOCATIONAL FIELD IN WHICH YOU COMPLETED MOST CREDITS (28934)		
Agriculture	3,050	10.54
Business	11,855	40.97
Distributive Educ.	665	2.30
Home Economics	4,158	14.37
Trade & Industrial or Technical Education	5,192	17.94
None	4,011	13.86

Item	Number	Percent
NUMBER OF CREDITS IN VOCATIONAL AREA (29267)		
1 or 2	5,256	17.96
3 or 4	8,502	29.05
5 or 6	4,809	16.43
7 or 8	4,222	14.42
9+	2,536	8.67
Not Applicable	3,942	13.47
GRADE AVERAGE, 9-12 (29386)		
A	3,200	10.89
B	12,109	41.21
C	12,893	43.87
D	1,184	4.03
FACTOR MOST RESPONSIBLE FOR YOUR BEING A SENIOR? (28798)		
Desire for knowledge	7,140	24.79
Desire to graduate	11,053	38.38
Social life in School	138	.48
Attendance laws	134	.47
Parents insisted	393	1.36
Work Study Program	69	.24
Understanding teachers	161	.56
Athletics, activities	439	1.52
National Youth Corp	28	.10
Desire to succeed	8,279	28.75
Friends go to school	180	.63
Don't know, other	402	1.40
FACTOR MOST RESPONSIBLE FOR DROPOUTS (29302)		
Lack of interest	16,848	57.50
Illness	448	1.53
Financial need	1,046	3.57
Lack of ability	1,325	4.52
Attendance	843	2.88
Curriculum	509	1.74
Family attitude	3,680	12.56
Non-acceptance, peers	1,445	4.93
Non-acceptance, teachers	635	2.17
Marriage	958	3.27
Get away from home	932	3.18
Family responsibilities	524	1.79
WOULD YOU HAVE DROPPED OUT IF YOU COULD? (28194)		
Yes	1,339	4.75
No	26,839	95.19
DO YOU HAVE ANY PHYSICAL DISABILITIES? (28136)		
Yes	3,071	10.91
No	25,057	89.06

Item	Number	Percent
NUMBER WHO HAVE HAD CONTACTS WITH VOC. REHABILITATION DIV.		
Yes	1,152	37.51
LEVEL OF EDUCATION ATTAINED BY FATHER (29381)		
Less than High School	7,061	24.03
Attended High School	4,341	14.77
High School Graduate	6,236	21.22
Some College or Trade	5,392	18.35
College Graduate	2,989	10.17
Has advanced degree	1,353	4.61
Don't know	2,007	6.83
MOTHERS EDUCATION (29292)		
Less than high school	4,579	15.63
Attended high school	5,753	19.64
High school graduate	9,544	32.58
Some college or trade	5,395	18.41
College graduate	2,320	7.92
Has advanced degree	473	1.61
Don't know	1,226	4.19
OLDER BROTHER(S)? (28837)		
Yes	13,017	45.14
No	15,820	54.86
OLDEST BROTHERS EDUCATION (13,017)		
Less than high school	382	2.93
Attended high school	1,593	12.24
High School Graduate	3,560	27.35
Some college or trade	5,400	41.49
College graduate	1.487	11.42
Has advanced degree	445	3.42
Don't know	149	1.14
OLDER SISTER(S)? (28807)		
Yes	12,478	43.32
No	16,329	56.68
OLDEST SISTERS EDUCATION (12478)		
Less than high school	363	2.91
Attended high school	1,499	12.01
High school graduate	4,241	33.99
Some college or trade	4,612	36.96
College graduate	1,391	11.15
Has advanced degree	203	1.63
Don't know	168	1.35

Item	Number	Percent
FATHERS OCCUPATION (29297)		
Office Work	1,911	6.52
Professional	2,474	8.44
Executive	2,622	8.95
Laborer	5,211	17.79
Salesman	1,671	5.70
Skilled Work	6,921	23.62
Has small business	1,705	5.82
Has farm or ranch	2,352	8.03
Military	746	2.55
Other	3,684	12.57
MOTHERS OCCUPATION (29478)		
Office work	3,997	13.56
Professional	1,769	6.00
Executive	216	.73
Laborer	2,596	8.81
Saleslady	1,139	3.86
Skilled work	1,571	5.33
Has small business	735	2.49
Has farm or ranch	110	.37
Housewife	16,387	55.59
Other	958	3.25
FAMILY INCOME COMPARED TO COMMUNITY AVERAGE (29062)		
Considerably above	1,226	4.22
Somewhat above	6,611	22.75
Average	18,515	63.71
Somewhat below	2,323	7.99
Much below	378	1.30
GRADUATES WHO PLAN FURTHER EDUCATION		
TYPE SCHOOL PLANNED BEYOND HIGH SCHOOL (23832)		
Vocational-technical	2,920	12.25
Junior college	2,862	12.01
Four-year college	6,900	28.95
Business college	1,417	5.95
Liberal Arts College	791	3.32
University	6,525	27.38
Don't know	2,411	10.12
IS SCHOOL PUBLIC SUPPORTER? (23259)		
Yes	15,520	66.73
No	4,550	19.56
Not applicable	3,184	13.69
IS SCHOOL IN OKLAHOMA. (23602)		
Yes	19,417	82.27
No	2,660	11.27
Not applicable	1,515	6.42

Item	Number	Percent
I PLAN TO MAJOR IN: (23233)		
SCIENTIFIC FIELDS		
Anatomy	14	.06
Anthropology	31	.13
Archaeology	44	.19
Astronomy	18	.08
Biology	222	.96
Botany	26	.11
Chemistry	235	1.01
Entomology	7	.03
Geography	38	.16
Geology	56	.24
Genetics	13	.06
Math & Statistics	482	2.07
Oceanography	57	.25
Physics	135	.58
Physiology	40	.17
Zoology	53	.23
MEDICAL FIELDS		
Dental Hygiene	66	.28
Dentistry	244	1.05
Dietetics	17	.07
Medicine	487	2.10
Mortuary Science	42	.18
Nursing	624	2.69
Occupational Therapy	36	.15
Optometry	56	.24
Osteopathy	16	.07
Pharmacy	229	.99
Physical Therapy	108	.46
Veterinary Medicine	227	.98
ARTS AND HUMANITIES		
Art & Sculpture	353	1.52
Architecture	333	1.43
Creative Writing	52	.22
Drama & Theater	129	.56
English & Literature	296	1.27
Foreign Language	188	.81
Journalism	209	.90
Radio-TV-Communications	175	.75
Music	529	2.28
Philosophy	24	.10
Speech	100	.43
Other Arts & Humanities	161	.69
SOCIAL, RELIGIOUS & EDUCATIONAL FIELDS		
Counseling & Guidance	97	.42
Education Administration	110	.47
Elementary Education	1,085	4.67
Home Economcis	575	2.47
Library & Archival Sci.	66	.28
Physical Education	578	2.49
Psychology	396	1.70
Secondary Education	625	2.69
Social Science	190	.82
Social Work	268	1.15
Sociology	164	.71
Special Education	130	.56
Theology & Religion	191	.82
ADMINISTRATIVE, POLITICAL &PERSUASIVE		
Advertising	71	.31
Business Administration	860	3.70
Law	430	1.85
Industrial Relations	52	.22
Merchandising & Sales	88	.38
Military	183	.79
Political Sci. & Gov.	161	.69
Public Administration	11	.05
Public Relations	98	.42
BUSINESS & FINANCE		
Accounting	767	3.30
Business & Commerce	1,000	4.30
Economics	87	.37
Finance	64	.28
Secretarial Science	1,255	5.40
ENGINEERING, AGRICULTURE & TECHNOLOGY		
Agriculture	525	2.26
Engineering	1,289	5.55
Engineering Technology	274	1.18
Fish & Game Manage.	124	.53
Forestry	144	.62
Industrial Arts	299	.99
Skilled Trades	860	3.70
Soil Conservation Work	14	.06
Other fields not listed	977	4.21
Don't know yet	2,960	12.74
PREFERRED KIND OF SCHOOL COMMUTING DISTANCE? (23438)		
Vocational-Technical	2,692	11.49
Junior College	2,058	8.78
Four-year College	4,739	20.22
Business College	1,238	5.28
Liberal Arts College	632	2.70
University	5,193	22.16
Not applicable	6,884	29.37
TOOK NATIONAL MERIT SCHOLARSHIP EXAMS (23586)		
Yes	7,369	31.24
No	16,213	68.74

Item	Number	Percent
WOULD YOU BORROW FOR COLLEGE IF YOU COULD PAY AFTER GRADUATION (6711)		
Yes	2,177	32.44
NO	2,170	32.33
Don't know	2,355	35.09

Long Range Plans

IF YOU GO TO SERVICE, WHAT WILL BE YOUR PLANS AFTER RETURNING? (11480)		
Continue education	4,234	36.88
Get a job	3,633	31.65
Remain in service	714	6.22
Don't know	2,899	25.25
IF YOU GO TO WORK DO YOU PLAN TO RESUME EDUCATION? (11148)		
Yes when funds are available	3,552	31.86
Yes when time is right	2,350	21.08
Yes, vocational school at a later date	2,347	21.05
No, get on-job-training	2,899	26.00
No, become housewife	1,939	17.39
Long Range Occupation (29013)		
Office work	4,889	16.85
Professional	10,995	37.90
Executive	1,614	5.56
Laborer	497	1.71
Sales	414	1.43
Skilled work	4,507	15.53
Have small business	568	1.96
Have farm or ranch	747	2.57
Housewife	1,979	6.82
Other	2,803	9.66

Item	Number	Percent
FOR MY LONG RANGE OCCUPATION FURTHER EDUCATION IS: (29058)		
Necessary	19,094	65.71
Desirable	7,174	24.69
Unnecessary	2,782	9.57
MOST VOCATIONAL EXPERIENCE PRACTICED IN HIGH SCHOOL WAS: (29088)		
On-the-job training	4,137	14.22
Office-clerical	6,956	23.91
Skill class or work	6,607	22.71
Vocational clubs	1,157	3.98
Record keeping	834	2.87
Public Speeking	2,166	7.45
Occupational study and observation	1,160	3.99
Project ownership	506	1.74
Other	909	3.13
None	4,656	16.01

Item	Number	Percent
TOOK COLLEGE ENTRANCE BOARD EXAMS (23531)		
Yes	2,485	10.56
No	21,040	89.41
TOOK ACT (AMERICAN COLLEGE TEST) (23491)		
Yes	16,020	68.20
No	7,467	31.79
PART OF FIRST YEAR COLLEGE EXPENSE YOU EXPECT TO EARN (23541)		
Less than $250	2,951	12.54
$250-500	5,583	23.72
$500-750	2,512	10.67
More than $750	1,429	6.07
None	2,328	9.89
Don't know	8,738	37.12
ABILITY OF PARENTS TO PAY COLLEGE EXPENSE (23399)		
Easily afford it	2,857	12.21
Can not help	3,567	15.24
Can afford it by sacrificing	6,328	27.04
Can help with part	10,643	45.48
WOULD YOU BORROW FOR COLLEGE IF YOU COULD PAY AFTER GRADUATION (23501)		
Yes	9,616	40.92
No	5,451	23.19
Don't know	8,428	35.86
MOST PRACTICE, COLLEGE TYPE EXPERIENCES IN HIGH SCHOOL (23498)		
Take notes in class	6,750	28.73
Write term reports	2,468	10.50
Taking semester exams	5,364	22.83
Individual study with oral reports	1,084	4.61
Long-term assignments	761	3.24
Planning own study time	4,029	17.15
Use of library	1,407	5.99
Other	184	.78
None	1,451	6.17
GRADUATES WHO PLAN TO ENTER JOBS WORK STATUS (7594)		
Have applied, no job	1,278	16.83
Not applied, plan to	4,231	55.72
Have applied, have job	689	9.07
Continue in present job	1,388	18.28

Item	Number	Percent
WOULD LIKE JOB IN: (7101)		
Office work	2,393	33.70
Professional	497	7.00
Executive	106	1.49
Laborer	622	8.76
Sales	411	5.79
Skilled work	1,521	21.42
Have small business	131	1.84
Have farm or ranch	208	2.93
Other	688	9.69
Not applicable	524	7.38
WOULD LIKE TO EARN, PER WEEK (6972)		
$15-45	646	9.27
$45-60	1,242	17.81
$60-75	1,435	20.58
$75-90	1,192	17.10
$90-105	912	13.08
$105-120	423	6.07
$120+	598	8.58
Not applicable	524	7.52
CONTACTS WITH STATE EMPLOYMENT SERVICE FOR JOB ASSISTANCE (6931)		
Yes	732	10.56
No	6,195	89.38
PARENTS ABILITY TO HELP IF YOU DESIRED FURTHER EDUCATION (6877)		
Could easily afford it	808	11.75
Could pay by sacrificing	964	14.02
Could help with part	3,616	52.58
Could give no help	1,482	21.55
WOULD BE INTERESTED IN THE FOLLOWING TYPE SCHOOL IF IT WERE IN COMMUTING DISTANCE (6868)		
Vocational-technical	1,999	29.11
Junior College	549	7.99
Four-year College	397	5.78
Business College	1,487	21.65
Liberal Arts College	147	2.14
University	236	3.44
Not applicable	2,049	29.83
WOULD YOU CONSIDER FURTHER EDUCATION IF MONEY WAS AVAILABLE? (4608)		
Yes	2,204	47.83
No	793	17.21
Don't know	1,604	34.81

VITA

Bob J. Piguet

Candidate for the Degree of

Doctor of Education

Thesis: A STUDY OF HIGH SCHOOL GRADUATES WHO INDICATED BIOLOGY AS THEIR EDUCATIONAL ASPIRATIONS

Major Field: Higher Education

Biographical:

Personal Data: Born near Catoosa, Oklahoma, November 18, 1930, the son of Claude W. and Willie L. Piguet.

Education: Attended grade school in Catoosa, Oklahoma; graduated from Catoosa High School in 1949; received the Bachelor of Science degree from the Northeastern State College, with a major in Natural Science, in May, 1965; received the Master of Science degree from the Oklahoma State University, with a major in Natural Science, in May, 1968; completed requirements for the Doctor of Education degree in May, 1971.

Professional Experience: Became a teacher of General Science in the secondary school of Rialto, California, in September, 1964; taught General Science, Biology, and Physics at Salina High School, Salina, Oklahoma, from August, 1966 to May, 1967; attended the Oklahoma State University as a graduate student from June, 1967 until May, 1968 through a National Science Foundation institute; served as laboratory instructor in the Biological Science Department at the Oklahoma State University from September, 1968 to May, 1969; taught Earth Science in the junior high school of Stillwater, Oklahoma from August, 1969 to May, 1970; taught Chemistry and Physics in McGuinness High School in Oklahoma City, Oklahoma, from August, 1970 to present.