Name: H. W. McKinney Jr. Date of Degree: May 29, 1960
Institution: Oklahoma State University Iocation: Stillwater, OkIahoma
Title of Study: A STUDY OF ENROLLMENT CHANGES WITHIN EIGHTEEN OKLAHOMA HIGH SCHOOLS WHICH HAD RARTICIPATED IN AN EXPERIMENTAI VISITING SCIENCR TEACHER PROGRAM

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## Major Field: Natural Science

Scope of Study: During the school year 1958-59, OkIahoma State University in cooperation with the Frontiers of Scieace Foundation of Oklahoma put a visiting science teacher on the road to travel to several schools carrying specialized equipnent and lectures to schools that were will ing to share in the cost of the program. This Progrem was expanced to twenty-five traveling teachers during 1959-60. This report is an atw tempt to evaluate the results of that program as it was carried out the first year. An attempt was made to measure the results in the increase or decrease in the enrollment in the elective high school science courses. Eighteen schools were visited and eighteen schocls were selected at random to serve as a control group. The records in the State Department of Education, Capitol Buillding, Oklahoma City, were searched for the needed data.

Findings and Conclusions: It was found that the schools visited had a high percentage of their students enrolled in science classes. It is assumed that the reason for this was that they were enough interm ested to help pay for the program. It was found that these schools had 28.6 per cent more of their student body enrolled in science classes than the control group. The small increase in enrollment in the participating schools was due to the near peak science class enrollment that they were already experiencing.

ADVISOR'S APPROVAL


A STUDY OF
ENROLIMENT CHANGES WITHTN
EIGHTEEN OKLAHOMA HTCH SOHOLS
WHICH HAD PARTICIRATED IN
AN EXPERTMENTAL VISITMW
SCIENCE TEACHER PROGRAM

By
H. W. McKinney Jr。

Bachelor of Science Oklahoma State University Stiliwater, Oklahoma 1950

Submitted to the Faculty of the Graduate School of the Oklahoma State University in partial fulfillment of the requirements
for the degree of
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June, 1960

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The Traveling Science Teacher Program is a new attempt at Science Education. Its merits and success is yet to be measured or discovered. The purpose of this report is to try to measure this success and merit. There are probably several criteria for measurement, but the increase or decrease in science class enrollment was the one chosen for this rem port. Follow-up research into the results of the program during the ensuing years will no doubt reveal much good has come from this effort. The second year of the program saw much improvement and expansion.

Indebtedness is acknowledged to Dr . James H. Zant, Claude Gatewood, and Dr. Carl Marshall for their invaluable guidance and assistance during the writing of this report.

Appreciation to the persons who proof read and typed this report for me is gratefully offered.

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## CEAPITER I

## INIRODUCTION

During the school year $1958 \times 59$ the Frontiers of Science Foundation of Oklahoma, Inc, and the Oklahoma State University sponsored a Travela ing Science Teacher Program to visit a number of Oklahoma schools for a week each.

Lectures and demonstrations were given to the science classes within the schools, to school assemblies, to Parent.mTeacher Associations, and also, to fraternal and business and professional organizations of the town or community being visited.

The purpose for the program was to stimulate the study of science by the students in each junior and senior high school. Whe contact with the adults of the community were to make them aware of their children ${ }^{i}$ s science education needs.

During the school year previous to 1958 m 5, increased interest had been manifested by the successful launching of Sputnik I。 Another thing which caused increased interest were reports of our trailing Russia in science and mathematics education.

As stated before, the Traveling Science Teacher Program was an effort to stimulate interest in science and its study in our high schools. Some teaching value to the high school student was certainly evident.

## Statement of Problem

This study is concerned with the problem of finding whether or not any measurable results were accomplished by the Traveling Science Teacher Program during 1958w59. The criteria selected for measuring its results is an increased or decreased interest in the elective seience subjects offered by the visited schools. An increased interest must be measured in increased enrollment if the results are to be valid to any degree. Need of Study

A need for a study such as the present one had been encouraged by the directors of the present Traveling Science Teacher Program to see if any measurable results could be obtained and may possibly be used by the Traveling Science Teacher Program to formulate the future policies of the program. An extended study of the results of the current Traveling Science Teacher Program is tentatively planned for next year using data that will then be available to anyone interested in continuing or extending this rem port. A much larger sample will be available, and possibly more measurable results may be obtained. The Traveling Science Teacher Frogram has been expanded to 25 teachers this year and the administrators of the program have indicated an interest in such a study。

## Limitations

All subjects that were taken in science and mathematics by the tenth, eleventh and twelfth grades are included in this study; however, where the subject is a required course or where it is offered only during alternate
years the results will be inconclusive. Both science and mathematics courses were studied to see if the sane trends would hold in each area.

The very small schools studied, offered physics and chemistry, as well as trigonometry and solid geometry in alternate years. In this case, the trend as a group will have to be taken rather than on the individual school or individual class. The very small sample was another limitation on the study.

## Procedure

Before the study could proceed it was necessary to select criteria for measurement and a method of selecting a control group. To offset the increased interest in science due to the accelerated program of scientific achievement begun by the State and Federal Governments, the deta for the year before are included in the study.

The method of choosing the control group was on a complete random selection after the categories of size had been determined. These categories or divisions of schools were made upon the basis of total enrollment according to the plan of the North Central Accrediting Association. Schools were separated into Group I (0-199), Group II (200.499), Group III (500-999), and, or Group IV (1,000-up). The enrollment figures for the schools, as well as for the classes, were taken from the files in the State Department of Education, State Capitol Building, Oklahoma City, Oklahoma.

The records of all the schools of the state were already on file in the State Department of Education according to the categories mentioned
above. After determining how many schools were in each category of the participating group, that same number of records were pulled from the files. First the file on each category wes divided into as many divim sions as there were schools in that particular category. At each divic sion point a school record was pulled and used as one of the control group. This same procedure was used to select the control group in each category. After the control group was selected the records were inspected, and all needed data was recorded.

Many contributing factors for both increased and decreased enrollw ment in both participating and control schools have been offered by those who know the situation personally, these have purposely been avoided.

The trends or correlations will be computed for this study by groups, since it is felt that in many instances (and taking into consideration the small sample) the trends or correlation for the individual school would be meaningless because of the contributing factors other than the visit from the Traveling Science Teacher. If the reader is interested in the individual school trend, table IImC through IIm contains the data for them.

The formula for selecting, at random, the eighteen schools of the control group was suggested by Dr. Carl E. Marshall, Head of Statistics Department, Oklahoma State University.

## Definition of Terms

The term, class enrollment, as used in this report includes every person who enrolled in the subject at any time during the year.

The term, total enrollment, as used in this report means the number of pupils enrolled in all classes offered by the high school.

The loss and gain column in the tables $I I=C, I I-D, I I=E$ and $I I=F$ is to show, at a glance, the total school enrollment status. The year 1958-59 was used as a basis or 200 per cent.

The year 1958 59 will be taken as the base year in correlating the class enrollments, since the data for the year betore the program was carried out, was available. The year, before the program, for total enm rollment was not available in the current files. The enroilment in 195859 will be taken as 100 per cent and the other years will be calculated perm centagewise accordingly.

The group will be referred to as Group I participating (Group ImP) or as Group III control (Group III.C) and so on.

The results of all the research are included in tables $I_{s} A$ through II, G.

Tables II, C through II,F are included so that the reader may see what the individual class enrollments for a particular school were Only tables II, A and II,B will be discussed in this chapter.

Group I
In tables II,A, group I-P had an increased total enrollment of 2 per cent and chemistry and physics showed an increase, but it will be noted that these are classes offered on alternate years and cannot be accepted as valid figures. The same group decreased in biology and general science. As fior the group I-C there was a 10 per cent decrease in total enrollment with only an increase in chemistry which again cannot be a valid increase for the same reason as offered above.

Table II, B shows all decreases or very slight increases in group Ias, while in group I-C both Algebra I and Algebra II showed good increases and especially Algebra II with a 67 per cent increase.

Group II

Table II,A shows in science courses total enrollment for group IIs. P had a decrease of 4 per cent while group II-C had a 3 per cent increase.

In class enrollment, group II P had a decrease in chemistry by 18 per cent and an increase in physics of 10 per cent was recorded. Biology rew mained near normal and showing a 7 per cent better enrollment the year before the program was offered.

In group IIw, chemistry came up 26 per cent in the year 1958 and climbed another 3 per cent the following year. Physics dropped back to its preprogram level. Biology gained 10 per ceat from the preprogram year with another 5 per cent gain after the program year. No data were available in general science.

Table II, $B$ recorded increases for both groups II $\mathbb{P}$ and IImC in all mathematics classes except Algebra I and Algebra II for group II P and one school in this group offered Algebra. II on altemate years, therefore ${ }_{3}$ 0 was the recorded enrollment for the year after the program.

Group III

Table II,A shows an increase for all science and mathematics classes except Biology in group IIIw as against 18 per cent gain in III-P, even though both groups had registered a decrease in total enrolment. In mathematics, the Algebra I, Algebra II, and plane geometry showed no gains except a 2 per cent gain in group III P plane geometry. Trigonometry and solid geometry for both groups had a very good gain. The control group had the highest gain, 20 per cent and 48 per cent as against 15 per cent in both classes for the participating group.

## Group IV

Table II,A reveals that gains in enrollment in science and mathematics classes were made by both groups but the greatest gains were made by the
control group. Group IV×P records revealed a loss in chemistry of 23 per cent and only 2 per cent and 3 per cent gains in physics while group IVलC had a gain of 15 per cent in physics, 15 per cent in chemistry and a 7 per cent gain in biology. Data for general science were not available since most of these schools offered general science in junior high school. Apo proximately the same trend was found in the mathematics for group IV.


TABLE II, B

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& \multicolumn{4}{|r|}{Algebra} \& \multicolumn{6}{|l|}{Algebra IT $/$ Glane} \& \multicolumn{3}{|l|}{Solid
Geometry} \& \multicolumn{2}{|l|}{Trig.} <br>
\hline \&  \&  \& / \& - \& $\begin{array}{cc} \\ 0 \\ 0 \\ 0 \\ 1 & 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0\end{array}$ \& 0
0
0
0 \& 1/ \& 0
0
0
0
0
0
0
0
0 \& a
3
0
0
0
0 \& \% \& \% \& a

0
0
$n$
0 \& 1
9
0
0
0
0 \& 0
0
7
0
0
0
0
0 \&  <br>
\hline Group I-P \& 178 \& 224 \& 206 \& 90 \& 105 \& 106 \& 139 \& 146 \& 15 \& \& \& \& 59 \& 38 \& 19 <br>
\hline Percent \& 80 \& 100 \& 92 \& 86 \& 2100 \& 101 \& 95 \& 100 \& 10 d \& 0 \& 1 \& 0 \& 132 \& 100 \& 50 <br>
\hline Group I-C \& 216 \& 139 \& 154 \& 78 \& 46 \& 27 \& 107 \& 137 \& 79 \& 27 \& 33 \& 0 \& 27 \& 37 \& 0 <br>
\hline Eercent \& 155 \& 100 \& 11. \& 167 \& 100 \& 167 \& 78 \& 100 \& 58 \& 81 \& 100 \& 0 \& 81 \& 100 \& 0 <br>
\hline Group II-P \& 248 \& 235 \& 179 \& 238 \& 293 \& 238 \& 428 \& 284 \& 369 \& 44 \& 55 \& 107 \& 110 \& 111 \& 140 <br>
\hline Percent \& 06 \& 100 \& 76 \& 80 \& 100 \& 81 \& 151 \& 100 \& 130 \& 80. \& 100 \& 195 \& 100 \& 100 \& 25 <br>
\hline Group II-C \& 258 \& 225 \& 204 \& 142 \& 210 \& 212 \& 412 \& 394 \& 390 \& 60 \& 47 \& 98 \& 62 \& 46 \& 97 <br>
\hline Percent \& 115 \& 100 \& 91 \& 98 \& 100 \& 101 \& 104 \& 100 \& 99 \& 127 \& 100 \& 208 \& 132 \& 100 \& 206 <br>
\hline Group III-P \& 114 \& 354 \& 291 \& 339 \& 456 \& 393 \& 603 \& 543 \& 556 \& 115 \& 141 \& 166 \& 115 \& 141 \& 166 <br>
\hline Percent \& 32 \& 100 \& 82 \& 74 \& 100 \& 86 \& 111 \& 100 \& 102 \& 82 \& 100 \& 115 \& 82 \& 100 \& 15 <br>
\hline Group IIT-C \& 710 \& 625 \& 450 \& 353 \& 403 \& 399 \& 589 \& 707 \& 631 \& 127 \& 82 \& 99 \& 97 \& 97 \& 144 <br>
\hline Percent \& 98 \& 100 \& 63. \& 88 \& 100 \& 99 \& 83 \& 100 \& 89 \& 94 \& 100 \& 120 \& 100 \& 100 \& 148 <br>
\hline Group IV-P \& 331 \& 579 \& 510 \& 840 \& 041 \& 954 \& 1282 \& 24 \& 131 \& 204 \& 84 \& 97 \& 213 \& 210 \& 237 <br>
\hline Rercent \& 57 \& 100 \& 88 \& 81 \& 100 \& 92 \& 103 \& 100 \& 105 \& 242 \& 100 \& 115 \& 101 \& 100 \& 13 <br>
\hline Group IV-C \& 736 \& 108 \& 958 \& 610 \& 854 \& 524 \& 209 \& 1445 \& 1492 \& 161 \& 193 \& 268 \& 182 \& 250 \& 308 <br>
\hline Percent \& 68 \& 100 \& 82 \& 71 \& 100 \& 96 \& 81 \& 100 \& 103 \& 83 \& 100 \& 139 \& 73 \& 100 \& 123 <br>
\hline
\end{tabular}

SCHOOLS THAT PARTICTPATED

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& \multicolumn{4}{|r|}{Total Sch.} \& \multicolumn{3}{|l|}{Chemistry} \& \multicolumn{5}{|l|}{Physics Biology} \& \multicolumn{3}{|r|}{General} <br>
\hline NAME OF SCHOOL \& \# \& $a$
5
3
$a^{\prime}$
$a^{\prime}$
$a^{\prime}$ \& - \& c|| \& 0
0
7
0
0
0
0
0
0 \& a \& a \& $\infty$

0
0
0
0
0 \& $a$
0
0
0
0
0
0
0 \&  \& 5
5
0
0
0
0
0 \& $a$
0
0
0
0
0
0 \& 0/ \& 0
0
0
0
0
0
0 \& $a$
5
0
0
0
$n$
0 <br>
\hline MEDFORD \& 109 \& 116 \& X \& 0 \& 0 \& 14 \& 7 \& 0 \& 6 \& 11 \& 18 \& 14 \& 24 \& 34 \& 53 <br>
\hline ST. GREGORY \& 194 \& 216 \& X \& 47 \& 32 \& 27 \& 13 \& 19 \& 24 \& 66 \& 52 \& 33 \& 27 \& 32. \& 30 <br>
\hline MANGUM \& 148 \& 164 \& X \& 0 \& 13 \& 0 \& 0 \& 0 \& 22 \& 27 \& 54 \& 28 \& 30 \& 47 \& 32 <br>
\hline WALTERS* \& 254 \& 224 \& - \& 0 \& 21 \& 0 \& 12 \& 0 \& 18 \& 27 \& 37 \& 62 \& 85 \& 81. \& 68 <br>
\hline TOTAL \& 705 \& 720 \& X \& 47 \& 66 \& 41 \& 32 \& 19 \& 70 \& 131 \& 161 \& 137 \& 166 \& 194 \& 188 <br>
\hline MADILL \& 266 \& 248 \& - \& 0 \& 45 \& 0 \& 28 \& 0 \& 23 \& 444 \& 38. \& 134 \& \& \& <br>
\hline PAWHUSKA \& 328 \& 322 \& - \& 30 \& 22 \& 29 \& 13 \& 30 \& 15 \& 77 \& 120 \& 81 \& \& \& <br>
\hline ANADARKO \& 380 \& 347 \& - \& 18 \& 26 \& 25 \& 15 \& 17 \& 17 \& 99 \& 66 \& 88 \& \& \& <br>
\hline HUGO \& 414 \& 404 \& - \& 31 \& 35 \& 32 \& 22 \& 14 \& 12 \& 117 \& . 90 \& 102 \& \& \& <br>
\hline PRYOR \& 460 \& 478 \& X \& 54 \& 54 \& 65 \& 22 \& 18 \& 32 \& 172 \& 169 \& 184 \& \& \& <br>
\hline GUTHRIE \& 463 \& 427 \& - \& 49 \& 66 \& 52 \& 11 \& 23 \& 13 \& 188 \& 168 \& 157 \& \& \& <br>
\hline total. \& 2311 \& 2226 \& - \& 182 \& 248 \& 203 \& 111 \& 102 \& 112 \& 697 \& 651 \& 646 \& \& \& <br>
\hline ARDMORE \& 599 \& 581 \& - \& 77 \& 91 \& 73 \& 31 \& 41 \& 40 \& 184 \& 173 \& 182 \& \& \& <br>
\hline CHICKASHA \& 629 \& 656 \& X \& 52 \& 76 \& 98 \& 21 \& 17 \& 30 \& 175 \& 184 \& 217 \& \& \& <br>
\hline STILLWATER \& 943 \& 927 \& $=$ \& 97 \& 89. \& 100 \& 33 \& 34 \& 32 \& 255 \& 248 \& 264 \& 124 \& 116 \& 121 <br>
\hline SHAWNEE* \& 1055 \& 1030 \& - \& 37 \& 45 \& 53 \& 79 \& 21 \& 66 \& 266 \& 159 \& 232 \& \& \& <br>
\hline TOTAL \& 3226 \& 3194 \& - \& 263 \& 301. \& 324 \& 164 \& 163 \& 168 \& 880 \& 764 \& 895 \& \& \& <br>
\hline BARTLESVILLE COLLEGE HIGH \& 1212 \& 1319 \& X \& 121 \& 142 \& 149 \& 101 \& 131 \& 144 \& 310 \& 306 \& 357 \& \& \& <br>
\hline PONCA CITY \& 1286 \& 1261 \& - \& 135 \& 131 \& 113 \& 49 \& 70 \& 50 \& 402 \& 411 \& 406 \& \& \& <br>
\hline ENID \& 1333 \& 1363 \& X \& 145 \& 155 \& 161 \& 70 \& 69 \& 76 \& 424 \& 439 \& 449 \& \& \& <br>
\hline WILL ROGERS TULSA \& 2525 \& 240 \& - \& 378 \& 464 \& 260 \& 195 \& 150 \& 162 \& 596 \& 668 \& 649 \& \& \& <br>
\hline TOTAL \& 6356 \& 6383 \& X \& 779 \& 892 \& 689 \& 415 \& 420 \& 432 \& 1732 \& 1824 \& 1861 \& \& \& <br>
\hline
\end{tabular}

TABLE II, D

SCHOOLS NOT PARTICIPATING

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& \multicolumn{4}{|r|}{Eotal Sch.} \& \multicolumn{3}{|l|}{Chemisery} \& \multicolumn{3}{|l|}{prosics} \& \multicolumn{5}{|l|}{Biology \begin{tabular}{l} 
General \\
\hline Science \\
\hline
\end{tabular}} \\
\hline NAME OF SCHOOL \&  \& \[
\begin{aligned}
\& a \\
\& a \\
\& a \\
\& a \\
\& a \\
\& 1
\end{aligned}
\] \&  \&  \& \[
\begin{gathered}
0 \\
2 \\
2 \\
2 \\
0^{2} \\
2
\end{gathered}
\] \& \[
\begin{aligned}
\& a \\
\& b \\
\& 9 \\
\& 0 \\
\& 0 \\
\& 0
\end{aligned}
\] \&  \&  \&  \&  \& \[
\begin{gathered}
\infty \\
0 \\
a \\
0
\end{gathered}
\] \& \(a\)
\(b\)
0
0 \&  \& \(c\)
0

8
8
8 \& $a / 0$
$7 /$
0
0
0
0
0 <br>
\hline TONKAWA \& 190 \& 175 \& - \& 34 \& 0 \& 20 \& 0 \& 17 \& 0 \& 24 \& 48 \& 31 \& 52 \& 41 \& 32 <br>
\hline WILSON \& 188 \& 157 \& - \& 21 \& 0 \& 16 \& 0 \& 23 \& 0 \& 0 \& 65 \& 0 \& 53 \& 46 \& 40. <br>
\hline yukon \& 170 \& 159 \& - \& 0 \& 23 \& 0 \& 12 \& 0 \& 11 \& 27 \& 63 \& 49 \& \& \& <br>
\hline VELMA ALMA \& 175 \& 158 \& - \& 28 \& 0 \& 25 \& 0 \& 12 \& 9 \& 30 \& 61. \& 33 \& 60 \& 42 \& 55 <br>
\hline TOTAL \& 723 \& 649 \& - \& 83 \& 23. \& 61 \& 12 \& 52 \& 11 \& 81 \& 237 \& 113 \& 165 \& 129 \& 127 <br>
\hline CLAREMORE \& 373 \& 383 \& X \& 38 \& 0 \& 69 \& 0 \& 59 \& 0 \& 142 \& 141 \& 135 \& \& \& <br>
\hline PAULS VALLEY \& 401 \& 407 \& X \& 33 \& 58 \& 35 \& 38. \& 28 \& 31 \& 176 \& 148 \& 173 \& \& \& <br>
\hline SULPHUR \& 349 \& 353 \& X \& 0 \& 33 \& 0 \& 33 \& 0 \& 27 \& 68 \& 87 \& 88 \& 71 \& 28 \& 64 <br>
\hline BIXBY \& 220 \& 230 \& X \& 19 \& 18 \& 19 \& 0 \& 0 \& 13 \& 46 \& 62 \& 64 \& 71 \& 119 \& 58 <br>
\hline WOODJARD \& 341 \& 365 \& X \& 0 \& 60 \& 44 \& 25 \& 17 \& 13 \& 86 \& 141 \& 180 \& \& \& <br>
\hline EREDERICK \& 234 \& 235 \& X \& 58 \& 32 \& 40 \& 0 \& 12 \& 18 \& 100 \& 108 \& 85 \& \& \& <br>
\hline IOTAL \& 1918 \& 1973 \& X \& 148 \& 201 \& 207 \& 96 \& 116 \& 102 \& 618 \& 687 \& 725 \& 148 \& 197 \& 122 <br>
\hline NORMAN \& 1276 \& 950 \& - \& 70 \& 68 \& 89 \& 35 \& 38 \& 47 \& 173 \& 319 \& 307 \& \& \& <br>
\hline EL RENO \& 656 \& 637 \& - \& 66 \& 58 \& 71 \& 22 \& 23 \& 30 \& 200 \& 277 \& 167 \& \& \& <br>
\hline CLINTON \& 625 \& 620 \& - \& 51 \& 56 \& 26 \& 20 \& 30 \& 28 \& 75 \& 120 \& 74 \& 94 \& 111 \& 130 <br>
\hline DUNCAN \& 998 \& 1004 \& X \& 87 \& 82 \& 89 \& 27 \& 43 \& 36 \& 355 \& 372 \& 390 \& \& \& <br>
\hline TOTAL \& 355 \& 3211 \& - \& 274 \& 264 \& 281 \& 104 \& 134 \& 141 \& 803 \& 1088 \& 938 \& 94 \& 111 \& 130 <br>
\hline N. W. CLASSEN \& 2071 \& 2122 \& X \& 128 \& 161 \& 155 \& 86 \& 76 \& 96 \& 437 \& 562 \& 511 \& \& \& <br>
\hline MUSKOGEE \& 1528 \& 1633 \& X \& 115 \& 127 \& 151 \& 51 \& 76 \& 83 \& 468 \& 612 \& 643 \& \& \& <br>
\hline LAWTON \& 1693 \& 1908 \& X \& 76 \& 90 \& 145 \& 127 \& 126 \& 149 \& 414 \& 482 \& 549 \& \& \& <br>
\hline PUTNAM CITY \& 1264 \& 1383 \& X \& 54 \& 81 \& 77 \& 27 \& 47 \& 45 \& 93 \& 169 \& 245 \& 349 \& 362 \& 384 <br>
\hline TOTAL \& 6556 \& 7046 \& \& 373 \& 459 \& 528 \& 291 \& 325 \& 373 \& 1412 \& 1825 \& 1948 \& 349 \& 1362 \& 384 <br>
\hline
\end{tabular}

TABLE II, E

SCHOOLS NOT PARTICIPATING


TABLE II, F

SCHOOLS THAT PARTICIPATED


## TABLE II ${ }_{9} \mathrm{G}_{\mathrm{G}}$

## Participating Schools

| Group Number | Total Enrollment | Science Class Enrollment | Percentage |
| :---: | :---: | :---: | :---: |
| I-P | 705 | 210 | 30 |
| II-P | 2,311 | 990 | 43 |
| III-P | 3,226 | 1,307 | 41 |
| IV-P | 6,356 | 2,926 | 45 |
| Total | 12,598 | 5,433 | 43 |
| Control Schools |  |  |  |
| I-C | 732 | 176 | 14 |
| II-C | 1,918 | 862 | 45 |
| III $\sim$ C | 3,555 | 18181 | 33 |
| IV-C | 6,556 | 2,071 | 32 |
| Total | 12,761 | 4,290 | 33.6 |

## CHAPIER III

## CONCLUSION

No conclusive evidence was found that the participating schools showed any decided increase in science class enrolments. Actually in the majority of the cases the control schools were found to have an inc significant increase.

The schools in group I were too small to offer every science course every year. The plan in these schools is to offer one course one year with ninth and tenth graders taking it and one course the same year with eleventh and twelfth graders enrolling in it. The alternate years the other two courses are offered under the same plan. This study was made on the basis of enrollments for just the three years and consequently data for only one year were available in some cases. This prohibited the use of the data for these schools.

In group II the control group showed more increase but the total enrollment had also increased. The participating group with a small total enrollment presented a much greater decrease in class enrollment.

Except in biology group III with its decrease total enrollment per school showed a greater gain in the control group. Both group IV inw creased in all classes except chemistry in the participating group, but greatest gains were in the control group.

The author is convinced that other criteria for measuring the success of the program should be explored. Possibly a study made by visiting the participating school counselors and principals would show that there had been a greater interest and desire on the part of the student after the program. It seems possible that producing a better science student is more important than merely increasing enrollment in science classes. It is possible that some students realized the need for more diligent study in the science fields and dropped out because they were unwilling to do the work required of them, while other students were interested in science for the first time and enrolled in elective science or mathematics.

Further study along these avenues of approach mentioned above plus enrollment increase or decrease is recommended.

After the comparison of class enrollments failed to produce any signio ficant trends, questions were raised in the mind of the author. The schools that participated paid a fee of One Hundred and Fiffty Dollars for a visit from the Traveling Science Teacher which was evidence that these schools were more interested in science education than those who would not pay for these services. If the interested school through counselors and teachers had already reached a peak or climax or a point of saturation in science class enrollments then there was not as great an opportunity for them to increase enrollments as the school who did not have the desire for better science education. Table II,G shows year 1958-59 enrollment in science classes as a per cent of total enrollment.

Group II-C was the only group of the control group which exceeded the participating group in the percentage of the total enrollment enrolled in
science classes. Further study revealed that this one group had included within it a school on the $8-4$ plan and the ninth graders were included in the total enrollment count. Since ninth grade students do not enroll in chemistry, physics, or biology this percentage was invalid. When the ninth grade enrollment was excluded the percentage of the participating group equaled that of the control group. There is also the possibility that one or more schools in group IImC required students to take biology. The information obtained by running these percentages shows that alo though the control group exhibited the greatest enrollment gains they acto ually had in some instances as much as 50 per cent gain to make before they were equal percentagewise with the participating group. With the exception of the very small schools group the science class enrollment was from 41 to 45 per cent of total enrollment, enrolled in chemistry, physics and biology, while the control group had with exception of group II from 24 to 32 per cent enrolled in these courses.

When the total enrollment and science class enrollments (table II,G) were totaled for all participating and all control schools the percentage told a different story. The participating schools had 43 per cent of all their students enrolled in science courses as against 33.6 per cent of the students in the control schools. This represents a very significant factor controlling low per cent of increased enrollment in the participating schools. Participating schools had 28.3 per cent greater proportion of their students enrolled in science courses.

H. W. McKinney Jr. Candidate for the Degree of Master of Science

## Report: A STUDY OF ENROLIMENT CHANGES WITH EIGHTEEEN OKLAHOMA HIGH SCHOOIS WHICH HAD PARTICIPATED IN AN EXPERIMENTAL VISITING SCIENCE TEACHER PROGRAM

## Major Field: Natural Science

Biographical:
Personal Data: Born at Wilson, Oklahoma, April 20, 1921, the son of H . W. Sr. and Cleta Marie McKinney.

Education: Attended grade school in Plainview, Longrove, Brock, and Marietta, Oklahoma; graduated Marietta High School May, 1939. Received Ba.chelor of Science Degree from Oklahoma State University 1950 with a commajor in Industrial Arts and Biology and General Science Education; completed requirements for Master of Science De* gree in May, 1960.

Profiessional experience: Entered U. S.Army Air Fource 1941, returned after 4 years as a trouble shooter and airplane mechanic on B-17 airplanes to farm.on a newly purchased quarter section in Love County, Oklahoma. Returned to college 1948 and after graduating 1950 taught 4 years Industrial Arts and Junior High School Science at Marietta Public School. One year was spent teaching Industrial Arts in Oakland Public School, Oakland, California. The next 4 years were spent teaching General Science, Biology, and Industrial Arts in Greenville High School, Love County, Oklahoma. In June, 1959 entered National Science Foundaw tion Academic Year Institute at Oklahoma State University.

