AN ABSTRACT OF THE THESIS OF

Arthur Charles Verge for the Ed.D. in Education
(Name) (Degree) (Major)

Date thesis is presented May 8, 1963

Title CHANGES IN THE SCHOLASTIC BACKGROUND AND ACADEMIC ABILITY OF SUMMER SCHOOL STUDENTS IN THE SANTA MONICA, CALIFORNIA, JUNIOR HIGH SCHOOLS FROM 1956 TO 1962

Abstract approved Redacted for Privacy
(Major professor)

The purpose of this study was to investigate whether or not change has occurred in the scholastic background and academic ability of students attending the junior high school summer sessions of the Santa Monica Unified School District, California, between the years 1956 and 1962.

Applying a Fisher and Yates Table of Randomized Numbers to the total summer school population in each of the years between and including 1956 and 1962, a random selection of 250 students from each year was made. The 1750 students' I.Q. scores, their Iowa Percentile scores, and their Grade Point Averages in the basic yearly subject grades comprised the three variables upon which the

statistical analysis was based. Preliminary computations revealed that the means of the three variables generally (15 times out of 18) increased over those of the previous year during 1956 through 1962, and the standard deviation of the various distributions generally remained similar.

To determine whether there was a significant linear trend during the years under study and, if so, whether any deviations from that trend were significant, a test of linear regression was applied to the following null hypotheses:

(1) There is no linear trend exhibited by the mean I. Q. scores.

(2) The relationship of the mean I. Q. scores is not nonlinear.

(3) There is no linear trend exhibited by the mean of the Iowa Percentile scores.

(4) The relationship of the mean Iowa Percentile scores is not nonlinear.

(5) There is no linear trend exhibited by the mean G. P. A.

(6) The relationship of the mean G. P. A. is not nonlinear.

Since the F-ratio for the linear trend of the mean scores of the I. Q. (8.99), the Iowa Percentile (5.07), and the G. P. A. (6.95) were all above the .05 level of probability (3.84), Null Hypotheses (1), (3), and (5) were rejected. With respect to significant deviations from this linear trend, the F-ratio indicated that the mean scores

for the I. Q. (.13), the Iowa Percentile (.13), and the G. P. A. (.48) were all below the .05 level of probability (2.21). Therefore, Null Hypotheses (2), (4), and (6) were accepted.

Among the more important findings from this study are:

1. Both demand for and availability of "enrichment" and "advanced" courses, as compared to "remedial" courses, increased during the seven-year period.

2. There was a statistically significant upward linear trend, without significant deviations, in the mean scores of the I. Q., the Iowa Percentile, and the G. P. A. during the years 1956 through 1962. Thus, since the mean scores for each of the three variables were on a linear trend with a nonzero slope over the designated years; and since there were no significant deviations from the linear trend; and further, since inspection of tabulated data revealed a steady, if unspectacular, upward trend in all variables over the seven-year period under study, it seems reasonable to conclude that the summer session student in 1962 exhibited a scholastic background and an academic ability superior to those of his counterpart in 1956.

Certain implications grow from these findings:

1. To meet the changing needs of learners, the summer school should periodically re-evaluate its curriculum.

2. In view of the dynamic growth of summer school and the complexity of its course offerings, more guidance is needed in

assisting students to plan for summer school.

3. Since recent summer school enrollments have increased by such large numbers, an adequate plan for financing the summer school program is urgently needed.

CHANGES IN THE SCHOLASTIC BACKGROUND AND ACADEMIC ABILITY OF SUMMER SCHOOL STUDENTS IN THE SANTA MONICA, CALIFORNIA, JUNIOR HIGH SCHOOLS FROM 1956 TO 1962

by

ARTHUR CHARLES VERGE

A THESIS

submitted to

OREGON STATE UNIVERSITY

in partial fulfillment of
the requirements for the
degree of

DOCTOR OF EDUCATION

June 1963

APPROVED:

Redacted for Privacy

Associate Professor of Education

In Charge of Major

Redacted for Privacy

Head of Department of Education

Redacted for Privacy

Dean of Graduate School

Date thesis is presented May 8, 1963

Typed by Jolene Wuest

ACKNOWLEDGMENT

In grateful acknowledgment to my wife Margaret Ann for her invaluable assistance and encouragement and to my major professor, Dr. Denis Baron, for his ideas, advice, and criticism throughout the preparation of this thesis.

I would also like to gratefully acknowledge the timely advice and prompt response in the proofreading of this thesis in its various chapters by Dean Franklin R. Zeran, Professor George B. Carson, Head of the History Department, and Professor Robert R. Reichart.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHANGES IN THE SCHOLASTIC BACKGROUND AND ACADEMIC ABILITY OF SUMMER SCHOOL STUDENTS IN THE SANTA MONICA, CALIFORNIA, JUNIOR HIGH SCHOOLS FROM 1956 TO 1962

CHAPTER I

INTRODUCTION

In October of 1957, the U. S. S. R. launched the first man-made satellite, and round the world the cry of "Sputnik!" -- sometimes awe filled, sometimes derisive -- was heard. Though America's youth was confident that the United States would soon match the Soviet's feat, it was not content to play the ostrich and bury its head in the sand of indifference. A surge of desire for more technological knowledge, even of impatience at the slow passing of the regular school year, moved young Americans to step up their learning process; and that desire and impatience, during the ensuing years, have wrought certain changes in the character of the summer session offered by the public schools.

But the pupils were not alone responsible for this. Parents, perhaps annoyed by their own educational limitations, prodded their children to enroll in courses that would one day enable them to take some part in what, at the time, seemed a need for America's scientific vindication. School plants and facilities were closely scrutinized by school authorities for the purpose of determining ways of utilizing

them to their maximum capacity. Curricula were re-examined, and it was in this area, particularly at the junior high school level, that many problems were encountered. Administrators, accustomed from previous years to growing enrollments, were faced with the necessity of formulating a summer school program which would meet all the needs of all enrollees -- not merely those whose imaginations and enthusiasm had been fired from Sputnik's launching pad. Thus, it became essential to ascertain the scholastic interests of summer school pupils so that an appropriate program of studies could be planned to meet their needs. The problem, so dramatically accentuated in 1957, continues to the present time.

The Problem

Until recently, many people (primarily lay persons, but members of the teaching profession were not always excepted) regarded summer school as a haven for slow learners, who were thus enabled to make up work not successfully completed in the regular school term (21, p. 23). Today, attendance at summer school often carries a different connotation. For many, it is a period of enrichment and educational advancement (8, p. 68). Thus, the question properly may arise: What types of students actually make up summer school enrollments today? Are they patterned after the old prototype--

students who are making up work they have missed or failed? Are they primarily seekers of knowledge to enrich and extend what already has been learned during the regular school year? Or are they, as a group, a combination of the two? It seems entirely possible that a number of students are still attending summer school because they have work to make up, and that others are enrolled for enrichment purposes only. If this assumption is valid, then it would seem that, in terms of a planned program, a school district ought accurately to assess the trend, if any, in the type of students who are currently enrolling in summer school as compared with the type of students similarly enrolled several years ago.

It is therefore the purpose of this study to discover in what ways, if at all, present summer school students in the junior high schools of the Santa Monica Unified School District (California) differ in scholastical background and academic ability from the summer school enrollees of 1956 and the intervening years. Between 1956 and 1962, the number of summer school students in those schools has almost doubled. But it is not so much with numbers as with caliber of students that this study is concerned, and in assessing caliber one may not wholly disregard subjective opinion. For example, personal conversations with members of junior high summer school

faculties within the Santa Monica Unified School District have revealed their belief that, on the average, current enrollees are more capable learners than those observed in previous years. Such subjective opinion, of course, requires objective substantiation if it is to be accepted as valid for the purposes of this study, and the methods by which verification was sought are described in a later section of this chapter.

Limitations of the Study

The Santa Monica Unified School District has come under study many times before, both in all of its aspects and in segments of them. More recently (1959), the Ford Foundation selected the district for a special study on students with behavioral problems, and for these specific reasons:

> Though a part of a larger metropolitan complex, Santa Monica was selected as a "community laboratory" for the study of juvenile behavior and problems because it is a separate, middle-sized community with a heterogeneous population . . . (10, p. 2).
>
> . . . The resident population of the Central Area represents a low socio-economic stratum, e. g. , unskilled laborers, domestic workers, etc. Within this district are Negro, Spanish-American, and Oriental subcommunities . . . (10, p. 48).

Such comments, of course, confined as they are to the group with whom the Ford study was concerned, do not paint an exact picture

of the Santa Monica community. In fact, the district draws from a population which, to paraphrase H. G. Wells, contains the whole spectrum of society from opulence and learning at the one extremity down to the mere disinclination for enterprise at the other. That this is so may be gleaned from the facts reported by the 1960 Bureau of the Census, scanty though these may be (Table 1).

Since this study is limited to a single school district in so varied a setting, findings must be considered indicative rather than absolute. Another factor which likewise should be borne in mind when evaluating the applicability of the results of this investigation to other school districts, is the district's norming score on the nationally recognized Iowa Test of Basic Skills. In alternating years since 1956, the Santa Monica Unified School District has administered the Iowa Test to all grades from one through twelve. Using the figure of 100 as the norming score for the average school participating on a nation-wide basis, Santa Monica has never fallen below 90 nor exceeded 110 in the years tested.

The study attempts no comparisons among or between junior high schools within the district. Neither does it include those Catholic schools which are a part of the feeder schools for the public junior high school system of Santa Monica because those schools do not consistently employ the Iowa and CTMM tests in their testing program.

Table 1. Population and socio-economic characteristics of Santa Monica, California (28, p. 6-55, 6-222, 6-224, 6-302, 6-322, 6-362)

Item		Number	Percent
Total population		83,249	100.0
White		78,122	93.8
Nonwhite		5,127	6.2
Employment distribution:			
Total population		83,249	100.0
Total gainfully employed		39,710	47.7
Total unemployed		2,608	3.1
Total not in labor force		40,931	49.2
Formal education			
Total persons 25 years old and over		56,663	100.0
No formal education		861	1.5
Elementary only (K-8)		12,855	22.7
High school (9-12)		26,070	46.0
College (one or more years)		16,877	29.8
Median school years completed - 12.2			
Number of annual family incomes		22,834	100.0
Under $3,000		3,116	13.6
$3,000 - $9,999		13,912	61.0
$10,000 and over		5,806	25.4
Median Family Income	$6,845		
Median Income - unrelated individuals	3,057		
Median Income (Male)	4,905		
Median Income (Female)	2,279		
Occupational distribution:			
Total employed in Santa Monica		39,710	100.0
Professional, technical workers		7,289	18.4
Farmers, farm laborers, farm managers		278	.7
Managers, officials, proprietors		3,281	8.3
Clerical and kindred workers		7,822	19.7
Sales workers		3,103	7.6
Craftsmen, foremen, kindred workers		4,608	11.6
Operatives and kindred workers		5,029	12.7
Household workers		949	2.4
Service workers		3,567	9.0
Laborers		1,022	2.6
Occupations not reported		2,762	7.0

Rather, an effort is made to determine the over-all learning capabilities of summer school students in 1962 as compared with those evidenced during the summer sessions of 1956, 1957, 1958, 1959, 1960, and 1961.

Importance of the Study

Although emphasis in this investigation is placed upon the type of student who currently attends summer school in the junior high schools under study, the administrator's role in providing the desired or necessary kind of summer education cannot be neglected. The quality of educational opportunities offered to children depends, to a great extent, upon the quality of educational leadership given by the administration. The junior high school principal's major function is to provide the best conditions possible for good teaching and effective learning at this critical age level. As one authority puts it:

> One of the most important duties of the principal is that of co-ordinating the educational program and activities of the school and the work and activities of the teachers . . . (19, p. 569).

To this proposition, most junior high school administrators will subscribe, at least in theory. In practice, however, they will recognize the fact that, in the final analysis, it is the student for whom the school exists and for whose educational welfare they concentrate their best efforts. It is hoped, therefore, that the results

of this study may assist junior high school principals in planning appropriate summer school programs, based upon accurate knowledge of the summer school student's capabilities and scholastic background, so that each enrollee may be helped to realize his potential and thus achieve success in future educational endeavors.

Definitions of Terms Used

Few unusual terms appear in this study, but some may require clarification for a more complete understanding of the discussion of findings. These are:

I. Q., which indicates the mental aptitude test score as measured by the California Test of Mental Maturity.

Iowa Percentile Score, a term denoting the percentile score on the Iowa Test of Basic Skills.

Average of the Basic Yearly Subject Grades, an expression representing the achievement mean for the three basic subjects (English, mathematics, and social studies) taken during the regular school year preceding the summer session in which the student was enrolled.

Scholastic background, refers to measures of success in the comprehension of a school subject.

Academic ability, a term referring to a student's capabilities to do school work.

Linear trend, which indicates that the scores are in a line that follows a general direction.

Non-linearity, a term denoting that the scores do not follow in a line.

F test, a comprehensive test of the significance of the differences among means.

Methods of Research

The following procedures were used in gathering and analyzing the data:

1. State audited school attendance records in the designated years for both the summer session and the regular school term were procured at the Santa Monica Board of Education.

2. The secured attendance records for the summer session and the regular school term were then mathematically compared for differences of growth rates.

3. Classified ("remedial", "enrichment", or "advanced") course offerings in each of the end years of the study were next obtained from the summer session class schedules of 1956 and 1962.

4. The classified course offerings of 1956 were then compared to those of 1962 in both number and percent.

5. Individual class registration cards for summer school in 1956 and 1962 were secured from the attendance offices of each of the junior high schools in Santa Monica.

6. After procuring the individual class registration cards for 1956 and 1962, student course selections were tabulated and classified as to preference for specific types of courses, namely, "remedial", "enrichment", or "advanced" course preferences.

7. The total number of the summer school students in the junior high schools of Santa Monica were next identified through their summer session registration cards for the years 1956 through 1962.

8. A Fisher and Yates Table of Randomized Numbers was applied to the total summer school population for the designated years to make a random selection of 250 students from each.

9. After identification and random selection of the summer school students, the cumulative records of the selected groups were examined for I. Q. scores, the Iowa percentile scores, and the basic yearly subject grades.

10. The mean and the standard deviation of the scores of each of the three variables were next computed for each year and then compared, both arithmetically and graphically.

11. An F test for trend and deviation from trend was applied to the secured data.

12. Finally, the evidence thereby revealed was analyzed to determine what trends, if any, were indicated in the scholastic background and academic ability of summer school students attending the Santa Monica junior high schools over the last seven years.

Organization of Remainder of Study

The subject of this study is but one facet of the larger problem which long has interested individual researchers and various educational agencies at local, areal, and national levels; namely, what are the learning capacities of the pupil population, and how can the schools best meet demonstrated needs? Chapter II, therefore, which presents a digest of related research, attempts to provide an overview of the problem as a whole in the light of national educational thinking.

In Chapter III, findings of the present study, together with an analysis of possible trends in the scholastic background and academic ability of summer school students during the years, 1956 through 1962, are recorded and discussed.

Chapter IV, which concludes the study, summarizes the investigation and offers certain conclusions and recommendations.

Obviously, the findings of a single study and the conclusions drawn from them can contribute little to the understanding of one aspect of a more inclusive problem unless they are considered in the light of findings in the larger area. Attention is therefore directed to the discussion of related literature which comprises the following chapter.

CHAPTER II

REVIEW OF RELATED LITERATURE

The history of summer schools in America can be said to parallel the growth of the country from its early beginnings as an agrarian society to the predominantly urban industrialization which characterizes its contemporary phase (11, p. 15). In the more than a century and a half during which this growth has taken place, the purposes and intent of the summer session have shifted emphases until today, as Conant remarks, the philosophy is not uncommon that:

> The school board should operate a tuition-free summer school in which courses are available, not only for students who have to repeat a subject, but also for the bright and ambitious students who wish to use the summer program to broaden the scope of their elective programs (8, p. 68).

This point of view, however, is a far cry from that existing at the turn of the nineteenth century. Then, the economic value of a child's labor was an influential factor in setting the length of the school year. Planting crops in the spring, cultivating them during the summer, and harvesting them in the fall was by no means the highly scientific work that it is today. Hand labor was required, and it was from among the older children of the farmer's usually sizable family that such labor was drawn. As a result, the rural school

calendar was divided into two terms: the winter term for the older children, while farm land lay idle; the summer term for the younger ones, whose labors still could not be turned to account because of their age. For a number of years this situation obtained. Then gradually, as better roads began to appear, improved school housing was provided, and people turned from the farms to the cities, the practice of having summer terms became less and less common (15, p. 115-118).

Concomitant with the physical changes which contributed to the decline of summer schools, however, another phenomenon peculiar to "the big city" was developing. Large numbers of children with nothing to do and nowhere to go were found to be roaming the streets in search of surcease from the long summer boredom which faced them from June to September. As early as 1868 it became apparent that some sort of program for these youngsters was imperative. In consequence, a "vacation school" was established in Providence, Rhode Island (probably the first of its kind in the United States), whose avowed purpose was

> . . . to counteract the evils of these conditions by providing creative occupation so enticing that, negatively, it shall claim the children from the streets and prevent them from forming evil habits, and, positively, by wise educative methods shall form good habits, and so shall upbuild, broaden and uplift them as to make them stronger, better children of God instead of degenerate

> followers of the adversary. In short, it shall replace the useless discipline of "don't" with the ever effective power of "do" (2, p. 512).

But these lofty purposes were supported almost entirely by local philanthropic organizations, and the summer (or vacation) school did not come under the aegis of the board of education until the first decade of the twentieth century. Even then, its primary aim was to

> ... offer the children an opportunity to get out of the hot and crowded streets and into more wholesome surroundings in which they may play, sing, and do elementary handwork and the like under competent direction ... (28, p. 151).

Nevertheless, some cognizance was being taken of the necessity for "enabling pupils failing in some of their studies of the previous year to make up work, and thus escape repeating a whole year's work" (28, p. 152). It would appear that such pupils, were not considered "college material," for at that time institutions of higher learning refused to honor credits earned during summer sessions on the grounds that the work done there did not meet accepted standards (5, p. 2). In spite of this apparent handicap, however, governing boards were now alerted to other educational possibilities inherent in the summer school -- possibilities which extended to acceleration programs for exceptionally bright pupils, enrichment programs for above-normal groups, and full use of the school plant (5, p. 20).

It was perhaps all of these possibilities which prompted Superintendent Addison B. Poland of Newark, New Jersey, to

recommend to his governing board in 1912 the establishment of what was to become known as "a most controversial plan of education"; namely, the all-year school. The plan divided the school year into four quarters, each of which usually consisted of twelve weeks. Under pressure from educators and parents for an additional quarter because of the increased number of students attending summer school, the board enthusiastically endorsed Poland's recommendation, and two of Newark's elementary schools were selected for the experiment (24, p. 194). By 1930, Newark's entire school system had adopted the all-year plan from kindergarten through high school (5, p. 19).

In the interim, other cities had followed suit. The possibility of establishing four three month terms to replace one nine-month term apparently had first been sensed when school boards had introduced into summer schools the novel idea of permitting students to do advanced work (5, p. 20). But in most cities the plan was short lived so that, by 1930, only six were continuing its use. These were Bluffton and Gary, Indiana; Omaha, Nebraska; Aliquippa, Pennsylvania; Nashville, Tennessee; and Newark, New Jersey (25, p. 68).

In Newark, however, a growing antipathy for the plan was becoming apparent. Writing in The School Executive, Newark's Superintendent Balcom stated:

> The principle of the all-year school is fundamentally wrong. We are living in a generation in which there is a good deal of tension in our work, a tension which we are constantly trying to relieve. I cannot see how it is desirable to keep children, with their greater play needs, to a full study program for twelve months in the year. Another kind of school, with shorter hours, in the mornings only and the afternoons devoted to play would be more consistent with the rational development of children, and would provide at the same time a thorough utilization of the school plant (1, p. 517).

Superintendent Balcom may have had a point for the generation of which he spoke; but it is questionable that, in 1962-63, his stress on less work and more play would find much support. While modern educators have not yet gone so far as to propose a return to the all-year school, many of them readily admit the values to both pupils and teachers of planned summer school programs. Chester D. Babcock, for example, in his Foreword to Extending the School Year, published in 1961 by the Association for Supervision and Curriculum Development, points up these values deftly and clearly.

> In recent years, we have seen much greater emphasis placed on some of the traditional subjects. We have also witnessed the introduction into the curriculum of new and reorganized bodies of content. We have become aware of the need for greatly expanding and extending learning opportunities in some areas. As a result, the daily program grows each year more crowded. We have been forced into the untenable practice of attempting to meet our responsibilities within the traditional time limitations . . . When more must be taught, more time must be made available. Where are we to find that time within the present structure (4, p. v-vi)?

> ... We have seen in recent years how a field such as arithmetic, long regarded as static by many, is actually a growing, changing discipline with new content and a new structure. The curriculum must keep pace with the dynamics of change. But when is this essential curriculum work to be done? Should we not make provision for this necessary work within the structure of the school calendar? Is this possible within the traditional 180-day to 190-day school year (4, p. vi)?

And, Babcock adds,

> ... the continued development of summer programs for both students and teachers seems highly desirable and inevitable.
>
> In all our schools, teachers and administrators alike have a single goal in common: the improvement of learning opportunities for children and youth. This represents the criterion on the basis of which decisions concerning summer programs must be made... (4, p. vii).

The rise and decline in number of summer schools in city school districts have been faithfully reflected in the Biennial Surveys of Education prepared by the U. S. Bureau of Education. The most rapid rise occurred between 1921 and 1927, while the most apparent decline marked the decade between 1928 and 1938. Both rise and decline are indicative of the forces that buffeted the nation between the two World Wars: the momentary hesitation that accompanied the brief financial crisis of 1922, the exhilaration that led to over-self-confidence at the end of the decade, the sudden plunge into the depths of a national depression during the early and mid-1930's when

"economy measures" dictated the cinching up of educational belts. During the period last named, a decline by 70 percent in the number of summer schools was reported, the decrease being accounted for partially by the need of school boards to reduce expenditures for "nonessentials" among which summer schools were classified (14, p. 34).

Then, with the advent of World War II, government and school boards alike once more smiled approvingly upon summer schools. But now the emphasis shifted from "make-up" work to "enrichment" and "acceleration" -- particularly the latter, for there was great need to accelerate the learning of both youths and adults in preparation for their entry into the armed forces or defense work. The regular school year was extended to include summer programs, and these helped to fill military needs most expeditiously in many areas (6, p. 16).

The impetus gained by summer schools during the war years continues to the present time. Today, however, the motivation is learning for its own sake rather than learning merely for the purpose of expediting the student's entry into some specific occupational area. On this phase of the subject, Conant comments:

> Summer sessions for bright students have increased in numbers during recent years. The sessions are usually six weeks long and in a few instances have become very popular among the brighter students. The importance of this development for the academically talented students is obvious . . . Development of a summer session seems to me preferable to the lengthening of the school year (8, p. 68).

This observation, made in 1959, remained unchallenged in 1961 when the Association for Supervision and Curriculum Development published its booklet, Extending the School Year. Says the ASCD:

> In theory, the concept of summer activities which supplement and reinforce those of the regular school year, i.e., the concept of the year-round school, is completely acceptable. In practice, much must be learned before specifics can be formulated for all phases of summer programs which fit into the year-round school concept . . . (4, p. 11).

Thus it would appear that a strengthened summer school program is more to be desired than a lengthened school year, particularly since "Considerable difficulty is encountered in justifying a longer school term for all students at this time" (4, p. 13).

The all-year school eventually died, though its death in some of its former strongholds was a lingering one. Currently the accent is once more upon the nine- or ten-months regular school term, with summer sessions that range between six and ten weeks in length (median, 7.3 weeks)(20, p. 41). Moreover, the emphasis in summer

school programs is shifting from help only for the slower students to a curriculum which includes something of value for all students. This means, says the NEA Research Bulletin, that "enrichment" is now a primary objective, and that "advanced work for the gifted" as well as "acceleration" are also stressed. No longer do "make-up classes" predominate; rather, the summer school curriculum is now characterized by such courses as Russian, Great Books, rapid reading, and creative writing (26, p. 23).

Encouraging as this changed outlook upon summer schools may be to some educators, however, Codwell sees certain pitfalls which summer school administrators should try to avoid. Some attention, he says, should be given to the maximum amount of credit a summer high school student is permitted to take. Without such attention, average and failing students may attempt class loads beyond their ability, and superior students may unduly accelerate their graduation from high school (7, p. 125-128).

But whatever the dangers possibly inherent in the summer school's "new look", results observed by administrators have indicated that many of them are cognizant of the advantages actually accruing to summer school enrollees. Some of these advantages, according to Ronald Notley who made a survey of 129 California school districts, are the following (22, p. 184):

> improves general academic achievement (26. 4%);
> affords enrichment opportunities (22. 5%);
> gives concentrated remedial program (17. 9%);
> helps individual or special children (13. 2%);
> provides in-service training of teachers (11%);
> parents like and want it (7. 8%);
> provides worth-while recreational activities (7%);
> improves reading (7%).

These and other advantages have been reflected in the enrollment figures for summer schools throughout the nation. In Normal, Illinois, for example, a relatively small community, the principal of University High School reports that:

> In summer session of 1952 when little more than remedial courses were scheduled, the total high school enrollment was 172. In 1958 summer session, when an extensive offering of enrichment courses were scheduled, 434 students were enrolled (16, p. 182).

And in Wichita, Kansas, Assistant Superintendent Paul Harnly states: "Summer session in secondary school grew from 579 in 1954 to 1,529 in 1959" (12, p. 184). An even more phenomenal growth in summer school enrollment was witnessed in Pasadena, California, where only slightly more than 600 students were enrolled in the secondary summer school program during 1955 and 1956. By 1960, with the emphasis on mathematics and science and enrichment of the high school curriculum, 2,874 secondary students attended summer school (3, p. 87).

Parry has described succinctly the fundamental problem which faced America's educators following the advent of Sputniks

and Explorers: "... there is so much to learn and so little time for the learning" (23, p. 116). In these circumstances, a

> ... sensible way to add quality, quantity, and opportunity to education is to use what we have already to better advantage; namely, a summer school program (ibid.).

On this premise he might have rested his case; but he went on to describe in detail how the summer school program in one school district (York, Pennsylvania) had met the challenge attendant upon the mandate for new programs and recommendations for new emphases in the curriculum. All courses offered during the regular school year were given upon demand, and taught by members of the regular staff. Sessions were eight weeks in length, five days weekly. Results of the first (1958) summer school indicated that of a 2,100 pupil population, 753 were enrolled (tuition free) and 60 more from outside the district were attending on a tuition basis. The existing plant and staff were fully utilized with little additional operating cost.

The York experiment was one of the first to implement the tentative plan growing out of the Governors' Conference held in June of the preceding year at Williamsburg, Virginia; namely, to "... consider means of using our school plant and staff more extensively for constructive optional summer programs" (11, p. 16). Four years after the Conference, the state of Wisconsin inaugurated

state aid for summer schools (11, p. 15); and by the beginning of the school year 1962-63, at least seven other states were considering similar legislation (18).

The optional summer school, according to Hatch, is one of the most rapidly growing movements in secondary education in the United States (13, p. 72). While slow and failing students still have a chance during the summer to strengthen their academic standing, average and above-average students are provided with enrichment and acceleration opportunities.

> This makes good sense [Hatch concludes], because the students who can profit most from education are the better students. Therefore, they should be provided with as many opportunities as the slower students (13, p. 81).

Summary

The growth and development of the summer school movement in many ways has paralleled the history of the United States. At first maintained only for the younger children of an agrarian society whose labors could not be turned to account because of their age, the summer school passed through various stages of growth. In the mid-1800's its chief function was to "get the children off the city streets" and give them something constructive to do during the long summer vacation. But even at this early period, some recognition was also

being given to the need for providing means for assisting pupils who were failing subjects in the regular school term. For many years thereafter, "summer school" carried the connotation of "make-up school" for slow learners. This situation was not static, however, for with the advent of World War II emphasis shifted from "make-up" work to "enrichment" and "acceleration." The regular school year was extended to include summer programs which helped to fill military needs and to prepare youth and adults for entry into defense work.

The old concept of the summer school as a haven for backward pupils never quite returned. More and more the objective of the summer program has come to be one of enrichment, of advanced work for the gifted, and of acceleration toward graduation. The curriculum has undergone considerable change as well, particularly since Sputniks and Explorers began their orbits of Earth. Emphasis upon science and mathematics has increased, although care has been taken in most instances to preserve the cultural aspects of education which, according to the American philosophy, play an important part in the life of the well-rounded citizen.

One state legislature has already taken steps to help finance summer school programs; others may eventually follow suit. But however the program is financed in the future, it seems clear that

"... we cannot and dare not turn off the spigot of learning from June to September each year" (17, p. 297).

CHAPTER III

FINDINGS OF THE STUDY

In a personal communication to the investigator under date of April 2, 1963, Superintendent Glen T. Goodwill of the Santa Monica Unified School District made the following statement:

> Since 1956 there has been a great upsurge of interest in quality education throughout the United States. This interest is felt in the home as well as in the school.
>
> Summer sessions were at one time largely remedial in nature on the junior high school level; classes are now primarily filled by students desiring enrichment opportunities and more intensive educational pursuits beyond those offered during the regular school year.
>
> Enrollment in computer mathematics, algebra, English, history and foreign languages on the junior high school level has greatly increased, and the achievement of a great many students is at a level far beyond what was formerly expected on the junior high school level.

This statement, in essence, embodies the thesis of this study but, like all information thus far reported, remains at the subjective level. It was to determine objectively whether or not the scholastic background and academic ability of summer session students has changed in the period between 1956 and 1962 that this study was undertaken.

Preliminary to a qualitative analysis of summer school attendance in Santa Monica's junior high schools, it seemed advisable to

examine enrollment figures quantitatively. The rationale for this procedure stemmed from the possible assumption that if the number of students attending junior high school summer sessions remained virtually unchanged during the period under consideration, then the type of enrollee was likely to remain unchanged as well. On the other hand, if a sizable increase in student attendance were revealed, this new element might reflect an actual change in the academic and scholastic background of summer session enrollees. Moreover, if enrollment figures indicated an increase in numbers of summer school students, it appeared necessary to check regular term enrollments to determine whether these had increased proportionately. Should it be discovered that such proportionate increases had occurred, then what appeared to be a sizable increase in summer school enrollment could actually be a mere reflection of a similarly proportionate increase in regular school year enrollment.

Several methods of counting students in summer school were available: (1) tabulating those who were in attendance during the first week -- a deceptive method, actually, since it does not take into account dropouts during subsequent weeks; (2) counting only those who remained in attendance after the first two weeks -- the method used in making the random selection of students included in this study; and (3) tabulating according to "average daily attendance" (ADA) as

reported by the California State Department of Education. The last method, possibly the best for statistical purposes, is based upon an audit by the State Department used in computing reimbursement to the district for carrying on the summer instructional program.

Utilizing ADA as the basis for student accounting in the Santa Monica junior high school summer sessions, 1956 through 1962, Table 2 presents enrollments for these years.

Table 2. ADA in Santa Monica junior high school summer sessions, 1956 through 1962.

Year	ADA Enrollments
1956	673
1957	891
1958	1,254
1959	1,497
1960	1,463
1961	1,651
1962	1,249

Between the years 1956 and 1962 the number of summer session students in the Santa Monica junior high schools increased by 86 percent.

Employing the same method of computation for regular session attendance, 1956 through 1962, Table 3 offers the following information:

Table 3. ADA in Santa Monica junior high school regular sessions, 1956 through 1962.

Year	ADA Enrollments
1956	2,647
1957	2,712
1958	2,698
1959	2,695
1960	2,726
1961	2,802
1962	2,726

The percentage increase in number of regular term students was only three percent between 1956 and 1962, thus negating the assumption that the growth in summer school attendance was a mere reflection of an over-all growth trend.

On the basis of these findings, it might be surmised that the marked increase in summer school attendance over regular term attendance during the seven-year period under discussion actually indicates an upgrading in the academic and scholastic background of the students attending the district's junior high school summer sessions. Such an assumption should be made with caution, however, for numbers alone can be deceptive. Thus, to analyze further this substantial increase in ADA over the years from 1956 to 1962, it appeared advisable to survey the summer courses offered in each end year and to classify them into the three categories, "remedial," "enrichment," and "advanced." According to the junior high summer school

co-ordinators (9), these three categories are defined as follows (see Appendix B):

A "remedial" course is one "offered to students who wish to make up failures, raise semester grades, or strengthen fundamental skills."

"Enrichment" courses are "offered to students who wish to pursue new subjects of interest or extend existing skills."

"Advanced" courses are those "offered to students of high ability."

In 1956 there were five "remedial" courses offered in the Santa Monica junior high summer schools; namely, English Improvement, Reading Improvement, Arithmetic Improvement, English, and Social Studies. Seven "enrichment" courses -- Art Metal, Conversational Spanish, Homemaking, Mechanical Drawing, Play Production, Typing, and Woodshop -- were offered during the same summer session. Advanced Mathematics and Preparatory Algebra were the only "advanced" courses designed for "students of high ability" offered that summer.

By 1962, as Table 2 reveals, summer session attendance had almost doubled. Whether or not this increase in enrollment was the proximate cause, a number of new courses were added to the summer school curriculum -- all of them "enrichment" and "advanced", the

former by 114 percent and the latter by 250 percent. "Remedial" courses remained the same, both in number and in content. In point of numbers, the "enrichment" courses added to the seven offered in 1956 included Art, Band, Creative Writing, Metalshop, Orchestra, Physical Education, Science, and Speed Reading, bringing the total to fifteen. To the two "advanced" courses available in 1956, Advanced Drafting, Advanced Literature and Reading, IBM Computers, Research Mathematics, and Science Laboratory had been added by 1962, making a total of seven offerings in this category.

The former position of remedial courses in the summer school curriculum had obviously changed in the seven-year period under study, and from this fact the tentative conclusion might be drawn that the static need for remedial courses and the demand for more enrichment and advanced courses reflected a changed academic and scholastic background among enrollees in 1962. But course offerings alone give only a partial and even a possibly distorted picture of the situation as it actually existed. For this reason it was thought expedient to examine individual and class records for the years 1956 and 1962. According to class registration cards, the number and percent of student class hours in each of the designated three categories were tabulated (see Table 4), and are graphically presented in Figure 1.

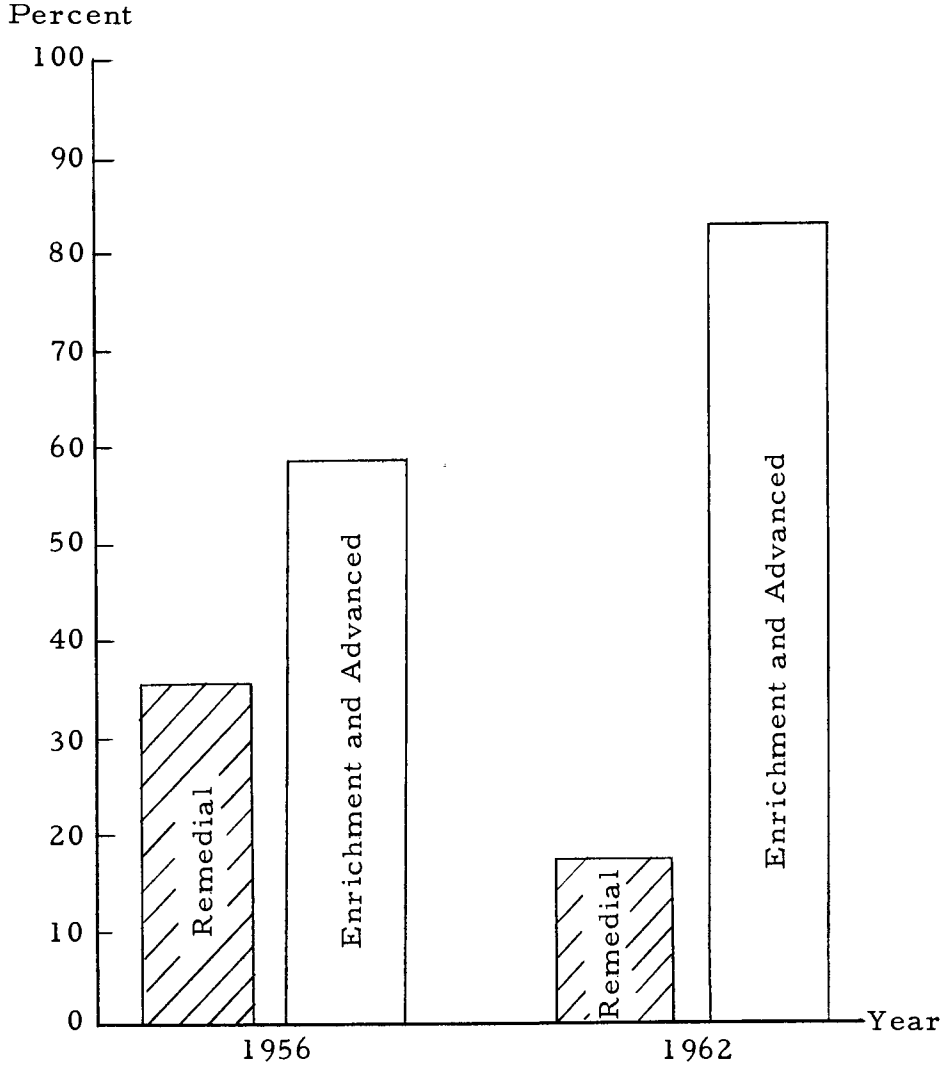


Figure 1. Percentage of Enrollments in "Remedial" and Combined "Enrichment" and "Advanced" Courses, 1956 and 1962.

Table 4. Number and percent of student class hours, by type of course, in the Santa Monica junior high school summer sessions, 1956 and 1962.

Year	Number and Percent of Student Class Hours by Type of Course							
	Remedial		Enrichment		Advanced		Total	
	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent
1956	353	34.6	595	58.3	72	7.1	1,020	100.0
1962	384	17.2	1,588	71.3	257	11.5	2,229	100.0

Although the foregoing tables and figure give insight into the composition of the district's summer school, they actually represent a compilation of data which merely support the facts that (1) there has been a quantitative change in the junior high school summer session enrollments over a period of seven years; (2) the summer school program has been expanded in the enrichment and advanced categories during the same period; and (3) a higher percentage of junior high school students were taking enrichment and advanced courses in 1962 than in 1956.

Since it is the purpose of this study to determine whether there has been any appreciable change in the academic and scholastic backgrounds of students attending the junior high school summer classes, an examination of a student sample was undertaken. Applying a Fisher and Yates Table of Randomized Numbers to the total summer

school population in each of the years between and including 1956 and 1962, a random selection of 250 students from each year was made. After examining the individual cumulative folders of each of the 1750 randomly selected students, the subjects' I. Q. scores, as measured by the California Test of Mental Maturity, the Iowa Percentile scores from the Iowa Test of Basic Skills, and the average of the basic yearly subject grades (hereafter referred to as G. P. A.) were selected as the variables by which to examine the students' scholastic backgrounds and academic abilities.

In Table 5 both the mean and the standard deviation of the I. Q. scores, Iowa Percentile scores, and the G. P. A. are presented. The standard deviation is included to assist in the interpretation of the dispersion of the 250 scores for each year for each variable. Inspection of Frequency Tables 7, 8, and 9 in Appendix A affords further analysis of the score distribution.

The difference in the mean I.Q. scores between 1956 and 1962 is three points (3. 04) and the percentage of increase from 1956 to 1962 is 2. 9. Beginning with the year 1956, there is a continuous upward trend in the mean I. Q. of each year's set of randomly selected summer school students with only one fluctuation occurring in 1960 (see Table 5).

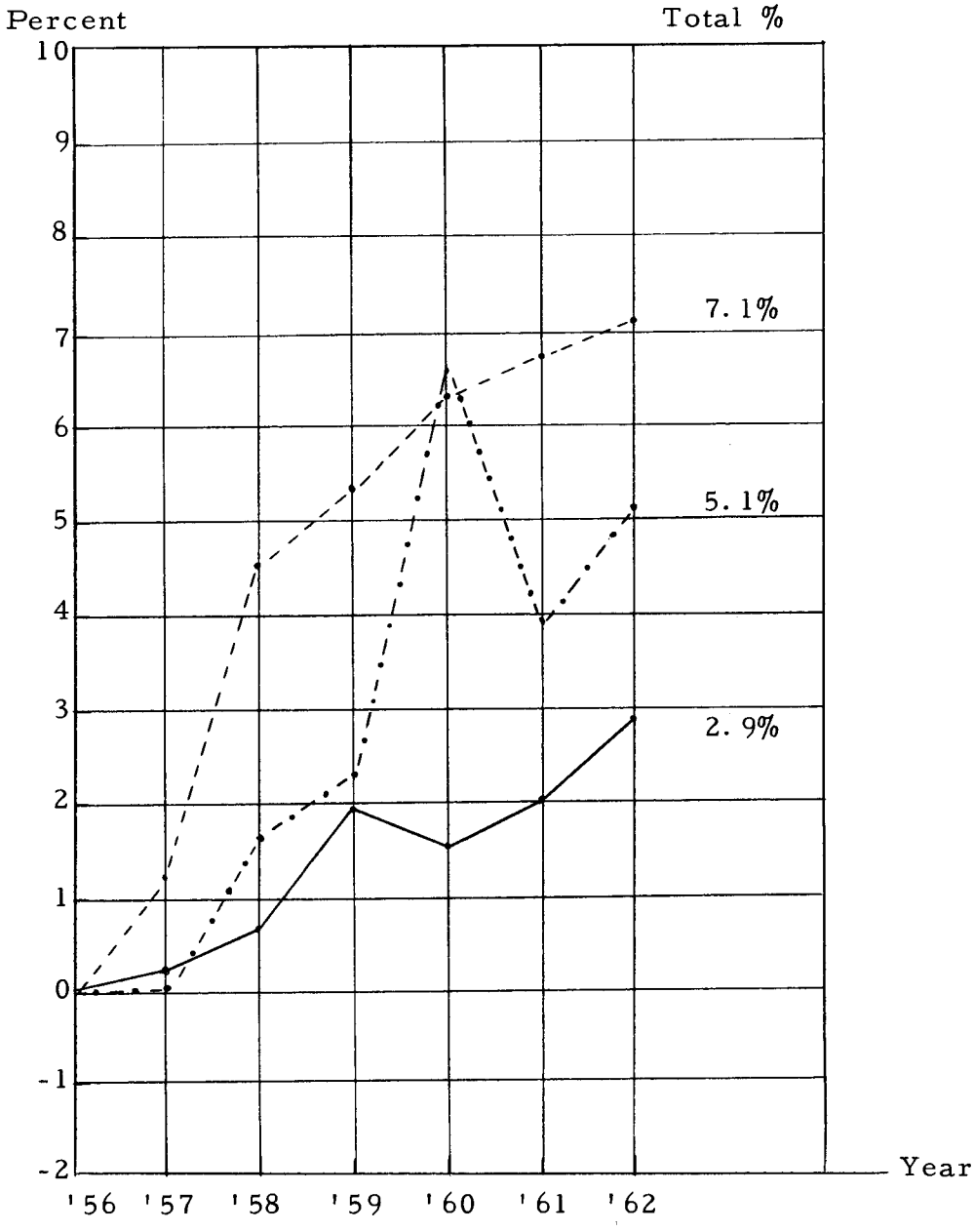
Table 5. Mean and Standard Deviation of I. Q. scores, Iowa Percentile scores, and G. P. A. of samples of 250 summer session students in Santa Monica for each of the years between 1956 and 1962.

	I. Q.		Iowa Percentile		G. P. A.	
Year	Mean	S. D.	Mean	S. D.	Mean	S. D.
1956	106.82	13.65	63.36	27.50	2.56	.81
1957	107.03	16.21	64.10	26.46	2.56	.79
1958	107.72	11.94	66.21	28.82	2.60	.78
1959	108.80	12.12	66.71	37.10	2.62	.83
1960	108.47	12.63	67.38	27.03	2.73	.77
1961	109.01	13.74	67.58	26.72	2.66	.79
1962	109.86	15.66	67.86	27.69	2.69	.88

The difference of the means between the Iowa Percentile scores in 1956 and 1962 is 4.5 points; the percentage of increase is 7.1. There is a continuous upward trend in the Iowa Percentile score in each of the years under study, with no regressions.

The difference in the means of the G. P. A. between 1956 and 1962 is .13, with a percentage increase of 5.1.

The information contained in Table 5 has been reproduced graphically in Figure 2. Here it will be observed that both the I. Q. and the Iowa Percentile scores have followed a similar trend between the years 1956 and 1962, increasing generally (11 out of 12 times) each year, with a rise in the mean score of either test over that of the



LEGEND:

I.Q. = ————

Iowa Percentile = – – – – –

G.P.A. = -•-•-•-•-•-

Figure 2. Mean Score Percentage Increase or Decrease in I.Q., Iowa Percentile, and G.P.A. of 250 Randomly Selected Junior High Summer School Students, 1956 Through 1962.

previous year.

Similarly, the means of the G. P. A. scores for the years between 1956 and 1962 are generally (4 times out of 6) upward. There are, however, two observable exceptions in this general increase. Between 1956 and 1957 the mean G. P. A. scores remained the same and in 1961 there was a noticeable decrease in the mean G. P. A. score from that of the previous year; but in each instance, an upward trend followed in the subsequent year (see Table 5).

One possible explanation for this phenomenon may lie in the fact that during the year 1959 to 1960 some experimentation with marking took place. Basing the experiment on the theory that better achievement might result if the former practice of allowing a ceiling C grade in remedial courses were eliminated and remedial students were permitted to receive higher marks if warranted, an effort was made to provide greater incentive for "grade-conscious" students. In actuality, however, the trial plan merely resulted in an artificial increase in general G. P. A., and the experiment was dropped.

In examining the standard deviations of the means of the three variables and by noting Frequency Tables 7, 8, and 9, it appears that the dispersion of the scores is generally similar in pattern save for the standard deviation of the Iowa Percentile score of 1959.

In summary, through inspection of Table 5 and Figure 2, it can be seen that the standard deviations of the various distributions generally remain similar while the means of the three variables appear to exhibit a general upward trend (15 times out of 18) between the years 1956 and 1962. Although the results manifest possible changes in the academic and scholastic background of summer school students between the years 1956 and 1962, it would be well to note also that the changes in the means of the variables are small over the seven-year period. The use of a recognized evaluative method is required to discover whether these various changes are significant.

The test of linear regression was therefore used to ascertain the significance, if any, of these changes in means. To determine significance, a five percent level of probability was utilized.

In the test of linear regression, trends and linearity for mean scores of the I. Q., Iowa Percentile, and G. P. A. of summer school students during the years 1956 through 1962, will be examined.[1/]

The following null hypotheses will be used to ascertain whether there is a significant linear trend, and if there is, whether the deviations from that trend are significant:

1. There is no linear trend exhibited by the mean I. Q. scores during the years 1956 through 1962.

[1/] Students referred to will be only summer session students who attended the Santa Monica junior high schools in the designated years.

2. The relationship of the mean I. Q. scores is not nonlinear during the years 1956 through 1962.

3. There is no linear trend exhibited by the mean of the Iowa Percentile scores during the years 1956 through 1962.

4. The relationship of the mean Iowa Percentile scores is not nonlinear during the years 1956 through 1962.

5. There is no linear trend exhibited by the mean G. P. A. during the years 1956 through 1962.

6. The relationship of the mean G. P. A. is not nonlinear during the years 1956 through 1962.

Table 6 reveals the results of the test of linear regression upon the stated hypotheses. In interpreting the computations, clarification as to the rationale for the use of the two steps in the test of linear regression might assist in its subsequent analysis.

Table 6. Table of F statistics for making tests of trend and deviation from linear trend over the years 1956 through 1962.

	I. Q.	Iowa Percentile	G. P. A.
Trend ("linear effect of mean on years)	8.99	5.07	6.95
Deviation from Trend ("lack of linearity")	.13	.13	.48

The first step of the test ascertains whether there is a linear trend or not. It answers the question as to whether the means occur linearly in a nonzero slope or whether they fall along a horizontal line.

The second and final step establishes whether there are significant deviations from the linear trend. This last test examines its "lack of linearity" (Deviation from Trend).

If it can be substantiated that the means vary linearly, namely, that they slope (step 1); and if it can be proved that the means do not significantly deviate from this linear line (step 2), it follows that the means are on either an upward or downward trend with no significant deviation from this linear trend.

In the initial examination of the data it was found that the mean I. Q. score of each sample of the 250 summer school students generally increased from year to year in the period under consideration. In attempting to determine if this general increase in the mean I. Q. scores in the years 1956 through 1962 was a significant trend, an F test for trend was applied to the null hypothesis that there is no linear trend exhibited by the mean I. Q. scores during the years 1956 through 1962. An F value of 8. 99 was secured from this test. This value substantially surpasses the five percent level of probability (3. 84) and therefore Null Hypothesis (1) was rejected. It is concluded

that the means of the I. Q. scores over the designated years vary with a nonzero slope.

Now that it has been determined that there has been a linear trend in the mean I. Q. scores over the years, it is next necessary to examine whether this linear trend has significant deviations.

The null hypothesis that the relationship of the mean I. Q. scores is not nonlinear over the designated years was therefore tested. The results of this test reveal that there is significant evidence of linearity since the computed F value of . 13 fell far short of the five percent level of probability (2. 21). Null Hypothesis (2) was therefore accepted.

Since it has been established that the means of the I. Q. scores vary linearly with a non-zero slope, it is concluded that the mean I. Q. scores over the years are on either an upward or a downward slope with no significant deviations from this linear trend.

In attempting to ascertain if there is a similar linear trend over the years in the mean of the Iowa Percentile scores, an F test was applied to the data. Since the F value of 5. 07 clearly exceeded the five percent level of probability (3. 84), Null Hypothesis (3) -- namely, that there is no linear trend of the mean of the Iowa Percentile scores during the years 1956 through 1962 -- was rejected.

The statistically substantiated linear trend in the mean of the

Iowa Percentile scores gives rise to the question: Is there a significant deviation from the linear trend? To find an answer, an F test was again applied to the data. From the test, an F value of .13 was found to apply to the null hypothesis that the relationship of the means of the Iowa Percentile scores is not nonlinear through the years 1956 through 1962. Since the F value of .13 falls below the five percent level of probability (2.21), Null Hypothesis (4) is accepted. Like the means of the I. Q. scores, it is therefore concluded that the mean Iowa Percentile scores over the designated years are on either an upward or a downward slope with no significant deviations from this linear trend.

Does the same conclusion apply to G. P. A. ? The F test was again used to test the null hypothesis that there is no linear trend exhibited by the mean G. P. A. over the designated year. An F value of 6.95 was obtained from the tested data. Since this value is considerably more than the five percent level of probability (3.84), Null Hypothesis (5) was rejected.

A similar statistical procedure was applied to the mean of the G. P. A. scores. An F value of .48 was obtained in testing the data, a value noticeably below the .05 level of probability (2.21). Thus, Null Hypothesis (6) -- namely, that the relationship of the mean

G. P. A. is not nonlinear during the years 1956 through 1962 -- was accepted. Moreover, since the means of the G. P. A. scores vary linearly with a nonzero slope, it is concluded that the mean G. P. A. scores over the years is on either an upward or a downward slope, with no significant deviations from this linear trend.

By applying the test of linear regression (F test) to the stated null hypotheses, it was found that the mean scores of each of the three variables fell into either an upward or a downward slope. Since a linear trend was found in each of the mean scores of the three variables, it was next determined if the slopes were positive or negative; i. e., whether the mean scores of these three variables sloped upwards or downwards.

Inspection of the data in Table 5 and Figure 2 reveals that the mean scores of the I. Q., the Iowa Percentile, and the G. P. A. have all increased between 1956 and 1962. It was therefore concluded that the slopes were positive; that is, upward.

In summary, the test results provide evidence that the mean scores of all three variables used in evaluating the academic and scholastic background of summer school students had increased in a significant positive linear trend without significant deviations during the years 1956 through 1962.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

It has been the purpose of this study to investigate whether or not there has been a change in the scholastic background and academic ability of students attending the junior high school summer sessions of the Santa Monica Unified School District, California, between the years 1956 and 1962.

The importance of such a study was revealed by a review of the literature which, over the years, discloses a story of almost continual change in summer school status not dissimilar from the social and economic changes that have marked the history of the nation. From its early beginnings as an agrarian society to the industrialization which characterizes it today, America has sought to maintain its "way of life" through its philosophy of education which assures all citizens equal learning opportunities in a system of free public schools. Originally, the implication here was the provision of summer classes where children could be educated when their services were not required on their parents' farms. Later, however, as people turned from the farms toward the cities, the need became apparent for some

kind of school which would keep the children "off the streets" during the summer months. It was at this time, too, that educators began to realize the necessity for providing summer classes in which students might make up work performed unsatisfactorily during the regular session.

For many years, this latter concept of summer sessions obtained. Then, with the advent of World War II, the emphasis shifted from "make-up" work to "enrichment" and "acceleration." The regular school year was extended to include summer sessions which helped to fill military needs and to prepare youth and adults for entry into defense work.

The old concept of summer school as a haven for backward pupils never quite returned. According to the literature, more and more the objective of the summer school program has come to be one of enrichment, of advanced work for the gifted, and of acceleration toward graduation. Moreover, in recent years the curriculum has undergone considerable change as well. Although care has been taken in most instances to preserve the cultural aspects of education, emphasis on science and mathematics has increased -- particularly since Sputniks and Explorers began their orbits of Earth. But have these "enriched" or "advanced" curricular offerings enticed a more capable learner among the summer session students to whom they are

available? It was in an attempt to answer this question that this study was undertaken.

Among the preliminary data concerning the "scholastic climate" in which the study was made were the following:

1. Between the years 1956 and 1962, summer school enrollments in the junior high schools of Santa Monica rose from 673 to 1,249 -- an increase of 86 percent. This increase, however, bore little if any relationship to the slight increase in regular session enrollments, which rose by only three percent (2,647 enrollees in 1956 as against 2,726 in 1962), during the seven-year period under study.

2. "Remedial" courses offered in each end year of the seven-year period remained unchanged (5), although "enrichment" courses increased from seven in 1956 to 15 in 1962, and "advanced" courses rose from two to seven in the same period of time.

3. Individual registration cards for specific types of classes revealed that 34.6 percent of the registrations were in courses classified as "remedial" in 1956, while in the same year "enrichment" and "advanced" courses claimed 65.4 percent of the registrations. By 1962, however, registrations in "remedial" classes had dropped by slightly more than half to 17.2 percent, and registrations in "enrichment" and "advanced" courses had increased by nearly a third to 82.8 percent.

4. Applying a Fisher and Yates Table of Randomized Numbers to the total summer school population in each of the years between and including 1956 and 1962, a random selection of 250 students from each year was made. The 1,750 subjects' I. Q. scores (as measured by the California Test of Mental Maturity), their Iowa Percentile scores (as measured by the Iowa Test of Basic Skills), and their Grade Point Averages in the basic yearly subject grades comprised the three variables upon which later statistical analysis was based. Prior to such analysis, however, the mean and standard deviation of the three variables were computed for each of the years between 1956 and 1962. The difference in the mean I. Q. scores between 1956 and 1962 was found to be three points (3.04), a percentage increase of 2.9. During the same period the mean Iowa Percentile scores rose 4.5 points (7.1 percent), while the G. P. A. exhibited a similar rise -- a .13-point increase (5.1 percent) being recorded. The means of the three variables generally (15 times out of 18) increased over those of each previous year during 1956 through 1962, and the standard deviation of the various distributions generally remained similar.

5. A test of linear regression was applied to these data to determine whether the general increase in the mean scores of each of the three variables between 1956 and 1962 was significant; that is, whether there was a significant linear trend and, if so, whether any

deviations from that trend were significant. The statistical analysis examined the following null hypotheses:

(1) There is no linear trend exhibited by the mean I. Q. scores during the years 1956 through 1962.

(2) The relationship of the mean I. Q. scores is not nonlinear during the years 1956 through 1962.

(3) There is no linear trend exhibited by the mean of the Iowa Percentile scores during the years 1956 through 1962.

(4) The relationship of the mean Iowa Percentile scores is not nonlinear during the years 1956 through 1962.

(5) There is no linear trend exhibited by the mean G. P. A. during the years 1956 through 1962.

(6) The relationship of the mean G. P. A. is not nonlinear during the years 1956 through 1962.

Since the F-ratio for the linear trend of the mean scores in the I. Q. (8. 99), the Iowa Percentile (5. 07), and the G. P. A. (6. 95) were all above the . 05 level of probability (3. 84), Null Hypotheses (1), (3), and (5) were rejected.

In establishing whether there are significant deviations from this linear trend, the F-ratio was again used. Since the mean scores for the I. Q. (. 13), the Iowa Percentile (. 13), and the G. P. A. (. 48) were all below the .05 level of probability (2. 21), Null Hypotheses (2), (4), and (6) were accepted.

Conclusions

The findings of this study appear to support the following conclusions:

1. Although the number of regular term students in the junior high schools of Santa Monica rose only three percent between 1956 and 1962, enrollments in summer sessions within the same period of time increased by 86 percent, thus indicating an accelerated interest in offerings available during the summer.

2. In the summer curriculum of 1956 there were five courses classified as "remedial" and nine categorized as either "advanced" or "enrichment". By 1962, the summer offerings in the latter two categories had jumped to 22, while the "remedial" offerings remained unchanged. This numerical increase in "advanced" and "enrichment" courses compared to the static position of the remedial courses indicates a considerably increased concern on the part of recent summer school students for the pursuit of new interests and skills.

3. The statistics reveal that there was a noticeable increase in the percentage of enrollments for advanced and enrichment courses in 1962 as compared with 1956, while during this same period it was likewise observed that there was a perceptible decrease in the percentage of class registrations for remedial courses.

4. There was a statistically significant upward linear trend in the mean scores of the I. Q., the Iowa Percentile, and the G. P. A. during the years 1956 through 1962. Since the data reveal that mean scores of each variable generally increased from year to year during this period, it is concluded that the slopes were positive; namely, upward. Moreover, the test results provide evidence that the mean scores of all three variables used in evaluating scholastic background and academic ability of summer school students increased in a significant upward linear trend without significant deviations during the years 1956 through 1962. Thus, since the mean scores for each of the three variables were on a linear trend with a non-zero slope over the designated years; and since there were no significant deviations from the linear trend; and further, since inspection of tabulated data reveals a steady, if unspectacular, upward trend in all variables over the seven-year period under study, it seems reasonable to conclude that the summer session student in 1962 exhibited a scholastic background and academic ability superior to those of his counterpart in 1956.

6. To meet the changing needs of learners, the summer school should periodically re-evaluate its curriculum.

7. In view of the dynamic growth of summer school and the complexity of its course offerings, more guidance is needed in

assisting students to plan for summer school.

8. Since recent summer school enrollments have increased by such large numbers, an adequate plan for financing the summer school program is urgently needed.

Recommendations

In light of the findings of this study, the following recommendations are made:

1. That the summer school director, in re-evaluating the curriculum, do one, or more, of the following: (a) invite a recognized authority to study the curriculum and make recommendations, (b) appoint interested faculty members to a "Summer School Curriculum Committee" with the specific purpose of investigating possible changes, and (c) himself investigate all facets of the problem.

2. That, for purposes of research, all pertinent summer school records (enrollment figures, kinds of students that are being enrolled, class offerings, etc.) be kept with the regular school records, and that the curriculum co-ordinator or other responsible educators evaluate such information.

3. That the school counselor, in co-operation with the faculty, organize a planned guidance program in which every student will properly be oriented to the various ramifications of course selections and

offerings in summer school.

4. That lay committees be formed (e. g. , PTA groups) to inform state-elected representatives and officials of the need for state aid in financing local summer school programs.

BIBLIOGRAPHY

1. All-year schools. The School Executive 49:517. July 1930.

2. American, Sadie. Vacation schools. Education 26:509-518. May 1906.

3. Aquila, Thomas A. How can summer schools enrich and/or accelerate student progress? The Bulletin of the National Association of Secondary-School Principals 45:85-86. April 1961.

4. Association for Supervision and Curriculum Development. Extending the school year. Washington, National Education Association, 1961. 70 p.

5. Brown, Hamilton Weldin. Trends in secondary summer school curriculum in California. Ed. D. thesis. Los Angeles, University of Southern California, 1961. 200 numb. leaves.

6. Chapman, A. L. Keep the schools open all year. The School Executive 61:16-17. May 1942.

7. Codwell, John E. A study of some administrative practices in summer high schools. The Bulletin of the National Association of Secondary-School Principals 45:125-128. May 1961.

8. Conant, James B. The American high school today. New York, McGraw-Hill, 1959. 140 p.

9. Daw, Mrs. Jean and Arthur Marinelli, Summer School Coordinators, Santa Monica Junior High Schools, Santa Monica Unified School District. Personal interview, January 22, 1963.

10. Glass, Norris, Albert G. Feldman, and Herbert R. Sigurdson. Community organization for delinquency control: An analysis of the role of private social agencies in Santa Monica. Los Angeles, Youth Studies Center, The University of Southern California, 1961. 72 p.

11. Hamann, Henry A. A break-through of tradition. Wisconsin Journal of Education 94:15-16. March 1962.

12. Harnly, Paul. How have summer schools been used to enrich the educational program for the academically talented? The Bulletin of the National Association of Secondary-School Principals 43:184-186. April 1959.

13. Hatch, Terrance E. State standards for summer programs in secondary schools. The Bulletin of the National Association of Secondary-School Principals 46:72-81. April 1962.

14. Herlihy, Lester B., Walter S. Deffenbaugh and Timon Covert. Statistics of city school systems, 1937-38. Washington, 1941. 358 p. (U.S. Bureau of Education, Bulletin no. 2. 1940)

15. Johnson, Clifton. Old-time schools and school books. New York, Macmillan, 1917. 381 p.

16. Lovelass, Harry D. How have summer schools been used to enrich the educational program for the academically talented? Bulletin of the National Association of Secondary-School Principals 43:182-183. April 1959.

17. Maynard, Zollie M. and Thomas D. Bailey. Summer schools with a difference! Florida's summer educational enrichment program. National Education Association Journal 46:297-299. May 1957.

18. Morrisett, Lloyd N., Professor Emeritus of Education, UCLA. Personal interview, February 23, 1963.

19. Morrisett, Lloyd N. Administration of the school system. In: Flaud C. Wooton and Eleanor Roberts (eds.). Report of the survey of the Pasadena City Schools: A co-operative study. Pasadena, 1952. p. 519-580.

20. National Education Association. Summer school programs in urban school districts. Washington, American Association of School Administrators and National Education Association, 1959. 41 p. (Educational Research Service Circular No. 7)

21. National Education Association. Summer schools equal opportunity. NEA Research Bulletin 38:23. February, 1960.

22. Notley, Ronald Earle. Status of the summer school program for elementary school children in California. Ed. D. thesis. Berkeley, University of California, 1959. 196 numb. leaves.

23. Parry, O. Meredith. Use summer school to broaden your curriculum. The High School Journal 42:116-118. January, 1959.

24. Reavis, W. C. Evaluation of the various units of the public school system: The all-year school. Review of Educational Research 1:193-199. June, 1931.

25. Roe, Warren. All-year school organization. Educational Method 10:66-69. November, 1930.

26. Summer schools equal opportunity. National Education Association Research Bulletin 38:23-24. February, 1960.

27. U. S. Bureau of the Census. United States census of population, 1960. California. Final Report PC(1)-6C. Washington, U. S. Government Printing Office, 1961. 142 p.

28. U. S. Commissioner of Education. Report for the year ended June 30, 1911. Vol. 1. Washington, 1912. 675 p.

APPENDICES

APPENDIX A

Frequency Distribution Tables of I. Q. Scores, Iowa Percentile Scores, and G. P. A. Scores of Santa Monica Junior High School Summer Students for the years 1956 through 1962

TABLE 7

Frequency distribution of I. Q. scores of Santa Monica junior high school summer session students, 1956-1962

Score	1956	1957	1958	1959	1960	1961	1962
140 Up	1		2	2	2	1	4
130-139	3	7	6	6	11	22	22
120-129	32	34	48	43	36	30	33
110-119	69	64	52	64	64	75	70
100-109	72	75	74	83	73	55	57
90-99	48	50	45	37	50	46	46
80-89	18	16	17	15	13	20	15
70-79	5	4	6	1	1	1	3
60-69	2						
N =	250	250	250	250	250	250	250

TABLE 8

Frequency distribution of Iowa Percentile scores of Santa Monica junior high school summer session students, 1956-1962

Score	1956	1957	1958	1959	1960	1961	1962
90-99 Up	59	57	75	65	73	69	82
80-89	31	34	39	36	43	33	35
70-79	32	29	27	29	25	38	21
60-69	31	32	21	36	19	26	22
50-59	25	27	19	21	26	20	24
40-49	17	16	16	28	18	16	15
30-39	24	26	21	18	16	18	16
20-29	10	13	8	13	14	15	15
10-19	8	11	10	6	7	8	13
0-9	13	5	14	8	9	7	7
N =	250	250	250	250	250	250	250

TABLE 9

Frequency distribution of G. P. A. scores of Santa Monica junior high school summer students, 1956-1962

Score	1956	1957	1958	1959	1960	1961	1962
4.0	15	19	14	24	23	26	24
3.7	22	18	18	21	20	20	30
3.3	26	19	34	24	37	24	25
3.0	31	35	35	29	25	34	30
2.7	36	41	36	40	49	32	37
2.3	34	23	32	32	38	28	34
2.0	44	46	39	36	28	52	28
1.7	18	31	23	21	16	22	20
1.3	12	12	9	14	9	7	8
1.0	10	5	8	7	2	4	13
.7	1	1	2	2	2	1	1
.3	1				1		
0							
N =	250	250	250	250	250	250	250

APPENDIX B

A reproduction of the Summer Session Notice for 1962 of John Adams Junior High School, Santa Monica, California, revealing classification of courses

JOHN ADAMS JUNIOR HIGH SCHOOL
Santa Monica, California
Summer Session Notice, 1962

Dear Parents:

The Santa Monica Board of Education has authorized the junior high summer schools to provide boys and girls with opportunities of strengthening any weaknesses in fundamental skills or participating in classes not ordinarily available during the school year.

Classes will be two hours in length and will be held from 8:30 to 10:30 A. M. and from 10:30 A. M. to 12:30 P. M., Monday through Friday, June 18 to July 27. No tuition will be charged. Once a student enrolls, attendance is compulsory. Three unexcused absences or five unexcused tardinesses will be the basis for dropping a student from summer school.

It is tentatively planned to offer the following courses. Both boys and girls of all grades may attend unless otherwise indicated. The grade listed refers to the present grade level of the student.

Enrichment
Offered to students who wish to pursue new subjects of interest or extend existing skills.

- Art
- Artcraft
- General Science
- General Homemaking
- Beginning Homemaking (6th)
- Summer Band
- Summer Orchestra
- Physical Education (Boys')
- Typing (One hour class)
- General Woodshop (Boys')
- Spanish (Conversational)
- General Metalshop (Boys')
- Practical Design (Rudiments of mechanical drawing with practical applications)
- Speed Reading

Remedial
Offered to students who wish to make up failures, raise semester grades, or strengthen fundamental skills.

- English Improvement
- Reading Improvement
- Arithmetic Improvement
- Social Studies

Advanced
Offered to students of high ability

- Science Laboratory
- Advanced Literature and Reading
- Advanced Mathematics
- Advanced Drafting--7th, 8th, 9th

Your response to the information on the reverse side of this notice will assist us in our planning. Please fill in all requested information and return this sheet to the homeroom teacher by March 26.

H. E. Laughlin
Principal

Barbara T. Nibley
Summer Session Counselor