

A DESCRIPTIVE STUDY OF THE DEVELOPMENT
AND ACCEPTANCE OF A UNIQUE
HIGH SCHOOL PLANT

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CHAPTER I

INTRODUCTION

The school plant is an educational tool. Architects and school people have heard that bruised and battered statement under a myriad of circumstances. Through the intervening decades since this statement was first made changes have occurred and will continue to occur in school organizations and curricular programs with very little thought given to the utilization of this tool.

Instruction is a changing process. The challenge is for boards of education and administrators to provide without restraint curricula for the present as well as the unknown programs of the future. This calls for school plants which are based on the needs of the students, the features of which are efficient and appropriate.

Within recent years there has been much vigorous criticism of the quality of education in the United States. Critics have been vociferous in their condemnation of deluded and antiquated educational content and programs. Many educators and lay people alike have proposed the upgrading of every level and area of learning.

There have been those who promulgated certain new educational ideas. Crash programs of various kinds have been advocated and adopted. Some have expressed concern over the educational environment.

Those concerned about the improvement of education have soon come to realize that programs of instruction were to a large extent limited

by the facilities provided and that traditional school plants were restrictive to many modern educational concepts. In many cases there could be improvements in the curricula only after there were improvements in the facilities.

As a result of this general concern, many school districts started taking a closer look at the relationship between curricula and facilities.

Many new school plants being built today are incorporating new concepts, innovations, and technology. One of the purposes for such changes in school construction is the effect that such changes will have upon the educational environment. Another purpose for such changes is to facilitate learning by favorably influencing the students' feelings of satisfaction.

The total effectiveness of these new aspects in school construction is difficult to assess. Nevertheless, these new aspects do pose a question of interest and importance to school board members and administrators who are charged with the responsibility of planning and developing a new school facility that will permit the up-grading of the curriculum.

The school plant selected for this study was the Blackwell, Oklahoma, Senior High School which was constructed in 1962. The Board of Education, in planning this unique school, wanted a building that would not only house students and teachers more adequately, but would also accommodate some of the newer and more effective trends in education (Figure 1).

Not only did the members of the Board of Education want a building designed to accommodate an improved curriculum, but they also wanted a



Figure 1. Aerial View of the New Senior High School

building that would provide an environment conducive to learning--by taking into account the best knowledge available on learning, growth and development, and positive attitudes toward the educative process. They wanted a building designed, constructed, and equipped that would neither distract nor interfere with the development of appropriate students' feelings toward school. The Board also believed that students' feelings could be influenced through a properly designed and equipped building and would be reflected in certain behaviors of the students.

Prior to planning and developing the architectural design of the building the Board of Education investigated and adopted certain new concepts and trends in education that would influence changes in the learning environment. This meant that first, the curriculum was determined, and then, the building was built.

A school building planned and constructed in this manner requires some imagination and creativity. This is especially true when research information is not available to show the effects of building design upon the feelings of the students.

Statement of the Problem

This study was an undertaking to describe a district's attempt to design and build a facility that would accommodate certain changes in the curriculum and provide an environment that would favorably influence the students' feelings of satisfaction. In addition, this study might serve as a guide for other schools confronted with a similar problem.

The purpose of this investigation was to determine the extent to which changes in the learning environment of a school would affect the

the opinions of the students.

This study was primarily concerned with three basic questions:

1. Can a school board, working with an architect, design and build an educational facility which incorporates the basic features envisioned by the board as being essential to the improvement of the curriculum that will be favorably accepted by the students?
2. Will certain unique design features in such an educational facility make any difference in the students' feelings of satisfaction?
3. Is there a relationship between the opinions of the students and certain unique building characteristics over a period of time?

This study was also concerned with the relationship of demographic variables and students' opinions. Demographic variables include students who were in the building for different lengths of time, namely one, two, and three years.

Purpose of the Study

The purpose of this study was to describe and evaluate the development and acceptance of a unique new high school plant. The primary purpose of this study was to evaluate the extent to which a new school plant--incorporating certain new technological and design trends--has actually influenced the opinions of the students who use it. More specifically, it was the purpose of this study to describe (a) the community characteristics that tended to result in a new and unique school plant; (b) the major elements and processes that led to and resulted in the building plan and the completed structure, and (c) the utilization of the plant and the effects of its unique characteristics upon the opinions of the students with respect to the educational assumptions made by the Board of Education in planning the school.

Review of the Literature

A review of the literature discloses the number of new school plants built, the number and amounts of bond issues approved, and the number of dollars spent on sites, buildings, and equipment. Scant research has been done in determining the extent to which these investments are achieving their real purpose--a positive effect on the students.

According to Knezevich¹,

there are many areas of school plant and equipment that lend themselves to objective analysis. On the otherhand, planning and designing require a type of ingenuity and inventiveness which is a synthesis of science, art, and business. Many of the most authoritative general treatises on the subject of school buildings and equipment are primarily non-research efforts, despite the fact that they are based heavily upon research. Research has shown the extent to which initial investments can affect savings in insurance and maintenance costs, but little has been done to show that such investments are justified relative to the effect of school plants on curriculum.

Educational Facilities Laboratories² points out that,

although no exact figures are available, the amount of money spent by schools for research and development of new and more appropriate ways of educating and housing school children is negligible. There has been great change in education, but most of it has come through broadening the program, not from daring explorations in new and better ways to teach and learn and build schools.

The post-war criticism crystallized itself most notably in a set of recommendations put forth in 1959 by a Commission of the National Association of Secondary Principals. This report advocated a complete reorganization of the high school, including teaming of teachers, the elimination of classes for thirty students in favor of both larger and smaller classes,

¹Stephen J. Knezevich, "Managing the School Plant and Business Affairs," Review of Educational Research, Vol. XXXI, No. 4, October, 1961, p. 428.

²Educational Facilities Laboratories, Profiles on Significant Schools, 1962, p. 12.

the employment of new technology, and a greater emphasis on independent study. These innovations--and others similar to them--make necessary a schoolhouse that is an equally radical departure from what has gone before.

Efforts to assemble information about the satisfactory physical facilities for schools began early in the nineteenth century. When Henry Barnard³ was secretary of the Board of Commissioners of Common Schools for Connecticut in 1838, he prepared a series of papers on the subject of "school architecture" which later was published.

Since that date literature on the subject of plant and equipment is extensive, although a great number of these items are not strictly research publications. Many of them are descriptions of the solution of school plant planning problems--accounts of architects, educational consultants, school administrators, and others in the solution of specific problems. A survey of certain issues of the Review of Educational Research shows that such authorities as Chase⁴, Essex⁵, Fisk⁶, Fowlkes⁷, Hamon⁸, and Viles⁹, have been among those who have attempted to describe solutions.

³Henry Barnard, School Architecture, Third ed. Barnes (A.S.), 1849, p. 381.

⁴Francis S. Chase, (Ch) "Education Organization, Administration, and Finance," Review of Educational Research, 25:281-363, 1955.

⁵Don L. Essex, (Ch) "School Plant and Equipment," Review of Educational Research, 18:5-70, 1948.

⁶Robert S. Kisk, (Ch) "Educational Organization, Administration, and Finance," Review of Educational Research, 22:277-385, 1952.

⁷John Guy Fowlkes, (Ch) "School Plant and Equipment," Review of Educational Research, 12:141-252, 1942.

⁸Ray L. Hamon, (Ch) "School Plant and Equipment," Review of Educational Research, 15:6-91, 1945.

⁹Nelson E. Viles, (Ch) "School Plant and Equipment," Review of Educational Research, 21:5-68, 1951.

Publications by the American Association of School Administrators¹⁰, Caudill¹¹, Engelhardt and Others¹², Herrick and Others¹³, MacConnell¹⁴, National Council on Schoolhouse Construction¹⁵, and Sumption and Landes¹⁶ are more research-oriented and yet colored with imaginative qualities of the architect and creative perspectives of the educator.

Research in school plant and business affairs was overly preoccupied with repetitive status or descriptive studies of narrow scope, and was unrelated to conceptual frameworks or predictive devices. Little of it was imaginative or inspiring. Few new concepts and techniques were developed in the past three years. Accidental rather than planned random or representative sampling was the rule, and recommendations and generalizations often went beyond available evidence.¹⁷

¹⁰A.A.S.A., American School Buildings, 27th Yearbook. NEA, 1949, p. 525.

¹¹William W. Caudill. Toward Better School Design. Dodge, 1954, p. 271.

¹²Nickolaus L. Engelhardt, and Others. Planning Secondary School Building. Reinhold, 1949, p. 253.

¹³John H. Herrick, and Others. From School Program to School Plant. Holt, 1956, p. 482.

¹⁴James D. MacConnell. Planning for School Buildings. Prentice-Hall, 1957, p. 348.

¹⁵National Council on Schoolhouse Construction. Guide for Planning School Plants. George Peabody Co., 1953, 179 p.

¹⁶Merle R. Sumption, and Jack L. Landes. Planning Functional School Buildings. Harper, 1957, p. 302.

¹⁷Review of Educational Research. Vol. XXXI, No. 4, October 1961, p. 433.

Much of the research in these areas settled into a sterile rut born of repetition, where it yielded interesting and isolated facts but few new insights. It lacked conceptual framework to unify separate research efforts and promote more profound understandings.¹⁸

There were some encouraging signs in the past three years, however. One was the appearance of publications in business and school-plant management devoted to uniform definitions and standards. These are valuable tools for research. Another was the research on relationships between planning, design, or construction of a school plant and subsequent costs of operation and maintenance. Budget studies were aimed at ascertaining factors which affect future patterns of expenditures, and these also deserved commendation. The more difficult but significant research on the effect of school plants or business procedures on the learning and teaching process remained undone.¹⁹

The literature on educational facilities reveals that there is a great need for school authorities to give more consideration to the school-planning process in order that buildings may be created that will more nearly suit the educational requirements of the curriculum. Herrick and Others²⁰, MacConnell²¹, and Sumption and Landes²² provide

¹⁸Review of Educational Research, p. 433.

¹⁹Ibid.

²⁰John H. Herrick and Others. From School Program to School Plant. Holt, 1956, p. 482.

²¹James D. MacConnell. Planning for School Buildings. Prentice-Hall, 1957, p. 348.

²²Merle R. Sumption, and Jack L. Landes. Planning Functional School Buildings. Harper, 1957, p. 307.

steps in the school-planning processes and review practices which have become more or less standard for individuals and organizations which have undertaken the more successful school-plant planning projects. A school-building planning handbook by Engelhardt and Others²³ differs from other such publications in that it contains many checklists and schedules relating to details of administrative aspects of building planning programs. The American Association of School Administrators²⁴, American Council on Education²⁵, and National Council of Schoolhouse Construction²⁶ are among other publications dealing with building planning.

Cornell²⁷ has stated what he thinks is the most important element in successfully planning suitable educational facilities and the need for more research studies on management aspects of building planning programs:

All the steps in planning and all the technical phases involved in the processes of providing suitable educational facilities are considered to be responsibilities of administration. Regardless of the various specialists, consultants, architects, committees, and other organizations involved in school plant planning and management, co-ordination is required, and leadership devolved upon the executive heads of educational institutions.

²³Nickolaus L. Engelhardt, and Others. School Planning and Building Handbook. Dodge, 1956, p. 626.

²⁴A.A.S.A. American School Buildings, 27th Yearbook. NEA, 1949, p. 525.

²⁵A.C.E. Things to Consider in Planning Educational Plants. The Council, 1948, p. 17.

²⁶National Council on Schoolhouse Construction. Guide for Planning School Plants. George Peabody Co., 1953, p. 179.

²⁷Francis G. Cornell. "Plant and Equipment," Encyclopedia of Educational Research, 3rd. Ed., (1960), p. 1008.

The specific operations and problems encountered in the step-by-step development of a building planning program which require administrative decisions are legion. Much has been written on the management aspects of building projects and related administrative services. There have been a number of careful research studies on special management aspects of building planning programs. Many of the studies are a generation or so old, so that their application to modern conditions needs to be made with care. There is need for a re-examination of many of the management problems in school-building planning. Doctoral students and others would do well to pick up from where some of the pioneer studies of the twenties and thirties left off.

Within the past few years millions of dollars have been invested in new secondary school plants. Various new technological and design trends have made considerable inroads into the planning and construction of many of these new plants. Greater consideration has been given to installation of recently developed mechanical equipment and technical teaching devices even though there are those who feel that much more should be done. Snider reminds us that in planning new school buildings that there is a greater need to include modern technology and he suggests that since the end of World War II all of the evident changes in American life have lead many educators to wonder if indeed, the American High School was keeping in touch with the changes in the world around it. As he has put it, "In the United States since World War II a very high level of technology has been reached in nearly every area of human activity--with the possible exception of the schools and the railroads."²⁸

The literature also makes evident that there is a need for school authorities to give greater consideration to the effects of buildings

²⁸ Robert C. Snider, "Teaching Machines," The Nation's Schools, February, 1960, p. 70.

upon the learning environment. In answer to this question, Cornell²⁹ has said that:

A school building which provides the best kind of environment for learning, which takes into account the best knowledge available on learning, growth, development, and creates positive attitudes toward learning and the educative process is necessary. And last, a building is needed that does not provoke unnecessary frustrations and emotional disturbances, and does promote good mental and physical health!

Woodson³⁰ points out the importance of school facilities being designed and equipped to fit the curricular activities and at the same time create the need for educational research which will assess the relative outcomes of the physical environment:

Just as it is important to design school buildings and equipment to fit the educational uses to which they are to be put, it is desirable to design them for the physical capabilities of human beings themselves. Technological developments have stimulated interest in human engineering for industry and military organizations. The time and motion studies of a generation ago in industry might have little bearing on educational thinking of 1960, but there remains much in education which is repetitive, and which may lead to boredom, unpleasantness, discomfort, and inefficient learning.

Studies of the type of interest in industrial psychology and human engineering suggest research needed in education to discover whether or not material implements of learning and the learning environment are conducive to productivity. Usually, research in learning and teaching is concerned exclusively with the intellectual aspects of problems. Educational research which assesses the relative outcomes not only of methods, but also of physical environment, is greatly needed.

It seems that the main problem of architects, builders, and school people is one of integrating all of, or at least a major part of, the

²⁹ Francis G. Cornell. "Plant and Equipment," Encyclopedia of Educational Research, 3rd Ed., (1960), p. 1008.

³⁰ Wesley E. Woodson. Human Engineering Guide for Equipment Designers, University of California, 1954, p. 345.

knowledge about learning into the best kind of learning environment. They need to know and apply the knowledge that learning is related to and concerned with many factors; motivation, emotions, intelligence, attitudes, and personality; and that buildings may become detractors, may interfere with attention, produce negative attitudes, may over-stimulate, and may be so aseptic in appearance that they discourage use, according to American Association of School Administrators.³¹

One of the most important propositions found in the literature was that of the relationship of school building facilities and the feeling and moods of the students as presented by Olsen.³² This idea so permeated the thinking of the school officials in planning and constructing the school under investigation in this study that it is interesting to observe this psychological premise converted into reality. This study centers itself primarily around this concept. Olsen says:

A further point that needs consideration is the fact that if architecture, buildings, and rooms are appropriately designed, constructed and equipped, they should be able to create feelings, moods, and even inspire those that use them.

The design of the school should create a mood or feeling for learning and study, and the classroom should instill proper place-habits for learning. Related to this mood or feeling is that which in learning theory is called "place-habit." A place-habit is the behavior or habits a person develops in relation to certain situations or places. A few examples will illustrate the point: When a person is hungry and goes into a restaurant to eat, exhibits place-habits appropriate for the restaurant and eating; when he uses a library he exhibits appropriate place-habits for learning, reading, and studying; and when he goes into a gymnasium he indicated through his behavior that this is a place for physical activity. The school should then not

³¹ American Association of School Administrators. American School Buildings, 27th Yearbook. NEA, 1959, p. 525.

³² Leroy C. Olsen, "School Architecture and the Learning Process," The American School Board Journal, October, 1961, p. 28.

only create a mood for education and learning, but also should provide a situation that will develop proper place-habits in relation to learning and education. A school building which is conducive to learning, develops proper moods and place-habits, and produces the necessary rapport between student and teacher.

However, if there is an awareness that most of the learning that takes place in school is abstract in nature, and that most of the experiences are vicarious, then it will also be realized that the necessity exists for designing something into our schools that will facilitate learning, not merely speed it up. If it is recognized that learning, other than in the elementary stages, is something more than simple conditioning, then it will also be recognized that there is a need for providing concrete experiences and realistic perceptions that will in turn reinforce abstract learning. It must also be recognized that a routine task learned by a worker and then used to earn money is significantly different than the student in school who has to learn many tasks and skills that are not only abstract, but in many instances unreal, and for which there is no immediate application or monetary return.

The literature reveals that some writers believe that educators and architects should be more aware of the psychological factors affecting attitudes and learning. They allude to the fact that attitudes can be unconsciously conditioned by structuring the environment and the attitudes tend to be associated with the pleasant and unpleasant elements in the environmental background.

The literature shows further that the need is extant for school buildings to be designed and built that will afford studies predicated on learning theories and attitudes.

The major purpose of the school program is to influence the understanding, knowledge, skills, attitudes, and practices of the students participating. In recent years there has been an increasing awareness of the impact which various facts of the environment make upon learning. Between the ages of five and eighteen, the average child spends many of his waking hours within the school environment. That this environment should be both suitable and healthful as possible has been

an accepted premise for many years. Yet a long-standing need has existed for a basic environmental criteria for school, by which either existing or planned facilities could be evaluated.³³

Fitts³⁴ raises the issue that the design and construction of school buildings might have secondary effects on the learning attitudes of students. He indicated that students' feelings can be so conditioned that unconscious learning takes place. This idea gives strength to the proposition that "a school plant is an educational tool." He says:

A factor that has been overlooked considerably in the design and construction of school buildings is that of "incidental learning." While not as much about incidental learning is known as would be desirable, it does take place. Advertising has made considerable use of this knowledge. Signs on buses and along roads advertise various products and when a person goes into a store, he asks for the trade name of the product rather than for the product itself. Incidental learning apparently functions at the unconscious level. A technique called "subliminal projection" in which a message is flashed on a television screen for a second and the subconscious takes it in and acts upon the suggestion is another example. Both of these techniques utilize incidental or unconscious learning. Why hasn't incidental or unconscious learning been used more extensively, particularly in the design of school buildings?

Winston Churchill's statement, "We shape our buildings; thereafter they shape us," is relevant to school plants, according to Dr. N. L. George.³⁵

³³ Environmental Engineering For Schools, U. S. Department of Health, Education, and Welfare, Washington, D. C., p. 10.

³⁴ Paul M. Fitts, "Engineering Psychology and Equipment Design," Handbook of Experimental Psychology. Wiley, 1951, p. 1287.

³⁵ N. L. George, "What's New in School Plants," Rotary News, September 2, 1964.

Limitations of the Study

It is granted that this study was limited in scope, but a descriptive study of this nature should be beneficial to other schools in planning and developing new buildings which will create more effective learning environments.

This study was also limited by several uncontrollable variables such as student maturation, personal appeal for new things, and the fact that certain psychological conditionings take place in the minds of some students during the planning and developmental stages of a new school.

The primary limitations of this study were (1) the number of appropriate school records complete, and (2) the investigator who designed and administered the instrument was also deeply involved in the planning and development of the new school while he served as Superintendent of Schools.

Explanation of Terms

Certain terms have been used synonymously throughout this study.

The terms "school," "building," and "school plant," for the purposes of this study have been used interchangeably as related to the new high school.

The terms "attitude," "feelings," "moods," and "opinions" have been used indiscriminately as reflecting student "satisfaction."

The term "students" refers to the respondents who were tested by the measuring instrument and has been used interchangeably with the term "subject."

The term "significant factor" refers to those factors which, after appropriate statistical treatment of data, were found to discriminate significantly at the five per cent level, the level of significance chosen for this study.

The term "unique characteristics" has been used throughout the study to identify certain specific "features" which were planned and designed into the building for the purpose of influencing students' attitudes and consequently their behavior.

The terms "curriculum" and "learning environment" in some cases have been used interchangeably.

Overview

An attempt is made in Chapter II to describe the procedures followed in conducting this study including the development of the measuring instrument which was used for gathering statistical information. Chapter III reviews the community background which provided the setting for the study, the school survey which preceded a fifteen year building program and was climaxed by the planning and development of a unique new high school, the steps followed in planning the new school, and finally an overall description of the unique design characteristics of the new school. Chapter IV deals with the statistical treatment and interpretation of data as to the effectiveness of certain unique design characteristics upon the students' feelings of satisfaction. In the final chapter, Chapter V, a summary of the findings is made with certain conclusions and implications presented.

CHAPTER II

DESIGN OF STUDY

Introduction

The Blackwell Senior High School was selected for this investigation for two basic reasons:

(1) This school is unique and was selected by the Educational Facilities Laboratories as one of eleven significant new high schools in the United States for 1962. Along with the emphasis on individual study, Blackwell begins to suggest some of the radical ways the schools are beginning to revise the conventional approach to organizing school space. In this school the space has been rearranged to suit some of the newer purposes of education.³⁶

(2) The principal investigator has intimate knowledge of this school since he served as Superintendent of Schools during its development and initial utilization.

The Population

For purposes of this study the population was grouped into three class categories, namely Sophomores, Juniors, and Seniors. The attitude opinionnaire was administered February, 1965, which was the third

³⁶Educational Facilities Laboratories, Profiles of Significant Schools, 1962, p. 51.

year in the new school building. This afforded the opinions from those in their first year, second year, and third year in the new building. Students not meeting the requirements of one year Sophomores, two year Juniors, and three year Seniors in this particular school were not included in the study. There were thirty-six such students who entered from other schools during their sophomore, junior, or senior years.

The total school population at the time of administering the instrument was 504 students (grades 10-12). Of the 504 students, the 36 who indicated that they had entered the Blackwell Senior High School from various other high schools during this period of study were dropped because of the inconsistency of variables for statistical treatment. This left a net of 468 students; 156 Sophomores in their first year in the new high school, 143 Juniors in their second year, and 169 Seniors in their third year. Furthermore, all of these students had previously attended school in the old high school building.

TABLE I
BASIC DATA REGARDING PUPILS

A. Enrollment

Classification	1962-1963			1963-1964			1964-1965		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Twelfth Grade	91	82	173	94	90	184	85	81	166
Eleventh Grade	115	97	212	92	85	177	92	93	185
Tenth Grade	104	94	198	111	88	199	111	87	198
TOTAL	310	273	583	297	263	560	288	261	549

B. Age-Grade Distribution

1964-65

Grade	Age										
	10	12	13	14	15	16	17	18	19	20	21
Postgraduate											
Twelfth						2	143	17	4	2	0
Eleventh					4	160	26	1	0	1	0
Tenth				5	170	22	4				

Procedure for Gathering of Data

An examination of various records relevant to this study was done as follows:

Historical data was gathered from books, magazines, newspapers and legal documents found in the Blackwell Public Library, city clerk's office, Chamber of Commerce files, and school files.

Data relative to the planning and development of the school was found in the files of the superintendent of schools.

Quantitative data was taken from the Blackwell High School files pertaining to enrollment, attendance, frequency of discipline cases, frequency of drop-outs, use of library books, percent of students using the cafeteria, and percent of graduating students enrolling in college.

Survey data that could be treated statistically was obtained by developing and administering an opinionnaire type instrument to all senior high school students.

This instrument (Appendix A) consisted of fifty-five statements and was administered in February, 1965. The statements were constructed to elicit opinions toward certain unique features and characteristics found in the new Blackwell Senior High School as compared to the traditional features and characteristics in the old school. Some statements were specific and others more general. Each statement was felt to be significant in trying to determine the opinions of students toward certain features purposely designed and constructed in a school building that would hopefully produce a favorable education environment conducive to producing positive feelings toward learning.

Students were asked to respond in terms of their own agreement or disagreement with the statements. The subjects were permitted to use any one of five categories: strongly agree, agree, undecided, disagree, or strongly disagree.

Constructing the Measuring Instrument

One of the major problems of this study concerned the construction of an instrument of measurement which would yield data compatible with the purposes and objectives of the study. Studies designed to collect evidence of attitudes have been conducted by numerous investigators, but for the purpose of this study no available form was found suitable for measuring the attitudes of the individuals in which the writer was interested and therefore he found it necessary to construct such an instrument. Since the investigation revolved around the collection and measurement of attitudes of groups of people toward a psychological object, an attitude scale was chosen as the instrument of measurement.

According to Edwards³⁷ the best-developed methods of measuring attitudes are those which involve the listing of opinions and which then require the individual to check those which he endorses. Such lists of opinions, when they are methodically prepared, are referred to as attitude scales. They have proved to be useful in a variety of research problems.

General areas were selected as a basis for determining reactions to selected statements. Areas were selected on the basis of general assumptions made during the planning of the building. A prepared list

³⁷Allen L. Edwards, Techniques of Attitude Scale Construction (New York, 1957), p. 13.

of 55 statements was made through the collaboration with high school teachers and Mr. John A. Outterson, Professor of Education, Oklahoma State University, who served as an advisor during the initial phases of the study.

In phrasing the statements, an attempt was made to state the essential idea in a conversational or informal manner rather than in the language of formal discourse. Consideration was given the criterion proposed by Edwards³⁸ which suggests that statements which are factual or capable of being interpreted as factual should be avoided.

In making the initial list of statements, Thurstone³⁹ suggests that 80 to 100 statements should be used. In the construction of this instrument 55 items were selected in the manner described above. There were 39 statements listed as favorable to the building characteristics and 16 statements listed as unfavorable. These were distributed throughout the list in a random manner. The advantage of having both kinds of statements represented was to minimize possible response sets of subjects that might be generated if either favorable or unfavorable statements were used.

The fifty-five statements included in the opinionnaire covered the areas of major interest regarding the unique characteristics of the new high school building. These unique characteristics were classified into areas for purposes of this study as follows:

1. Classrooms having glass interior walls.
2. Hallway (corridor) design.

³⁸Edwards, p. 10.

³⁹L. L. Thurstone, The Measurement of Values, (Chicago, 1959), p. 226.

3. Individual student home-base desks.
4. Location and design of library.
5. Cafeteria arrangement and method of serving meals.
6. Snack-bar.
7. Individual teacher's office.
8. Classroom equipment.
9. Closed-circuit television.
10. Architectural building design.

No attempt was made to equate the number of statements among the characteristic areas. It was felt that students could express their opinions effectively on some areas by responding to only a few statements while other areas considered to be more radical and extreme required several statements. The more radical the area, the more statements used.

Statistical Treatment

Siegel⁴⁰ states that nominal and ordinal measurements are the most common types achieved in the behavioral sciences:

A nonparametric statistical test is a test whose model does not specify conditions about the parameters of the population from which the sample was drawn. Certain assumptions are associated with most nonparametric statistical test, i.e., that the observations are independent and that the variable under study has underlying continuity, but these assumptions are fewer and much weaker than those associated with parametric tests. Moreover, nonparametric tests do not require measurement so strong as that required for parametric tests; most nonparametric tests apply to data in an ordinal scale, and some apply also to data in a nominal scale.

When frequencies in discrete categories (either nominal or ordinal) constitute the data of the research, the Chi-Square test may be used to determine the significance of the differences among K independent groups. The X^2 test for K independent samples is a straight-forward extension of the X^2 test for two independent samples. In general, the test is the same for both two and K independent samples.

⁴⁰Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences, McGraw-Hill, 1956, p. 31.

In this study an analysis of the data was made using X^2 . Facilities of the Oklahoma State University Statistical Laboratory were used in the computation of the data. The null hypothesis was tested by the investigator using data pertaining to the selected statements to identify significant differences between the opinion responses from each group of students. The level of significance required for rejection of the null hypotheses was set at the five percent level.

CHAPTER III

DEVELOPMENT OF THE SCHOOL PLANT

Introduction

The propensity for some communities to accept daring new challenges in school-plant design and construction while others remain conservative and traditional is ineffable. The total variables within a community which can be statistically evaluated in terms of their effectiveness on education are difficult, if not impossible to identify. The extent to which a community will invest in a school plant that will accommodate new educational concepts, trends, and innovations, cannot be totally determined through statistical analysis.

It is difficult, if not impossible, to know what combinations of community characteristics produce good schools and which ones do not. Money is not the only ingredient necessary for good school planning and construction. No one would disagree that communities do differ in their efforts to plan and develop new schools, but neither would anyone disagree that the quality and adequacy of these schools are determined by many unseen and unknown elements within a community.

Schools cannot be planned out of context of the community. Unique ideas of educators and architects will not make a school acceptable to a community that is out of tune with those ideas. Community backgrounds must be analyzed as part of the planning procedure.

For these reasons it was felt that a background description of a community would provide some insight for school officials and architects as to the general characteristics that might be conducive to the planning and construction of unique buildings. Blackwell, Oklahoma, a community that has been nationally recognized for a number of years for its acceptance of new educational trends and concepts in school building design, was selected for this purpose.

Community Background

In 1887 land hungry settlers brought pressure to bear on Congress to open new Oklahoma territory to settlement. Captain David L. Payne spearheaded groups in Kansas to settle in Oklahoma. He and his followers, known as "Boomers," established headquarters for a time at Rock Falls northwest of Blackwell and published a newspaper. The influence of this group and their newspaper, and other settlers caused Congress to force the Cherokee Indians to cede their land in the Outlet Strip. The cattle lease contracts were cancelled, the land vacated by the companies, and the area thrown open for homesteading with the greatest "run" for land in history. The "run" occurred at high noon September 16, 1893. County and territorial governments were established. Counties were initially designated by letters--thus "K" county became Kay County, Oklahoma.⁴¹

Blackwell originated like many other cities as a product of the land rush in the Cherokee Strip and was established on September 16,

⁴¹An Overall Resource Development Program For Kay County, Research and Planning Division Oklahoma Employment Security Commission, June, 1965, p. 51.

1893. The City was named for A. J. Blackwell, an adopted citizen of the Cherokee Nation. Mr. Blackwell took over the land, plotted the townsite and sold lots. Agriculture was the major component of the economic base. The cultural, social, and economic conditions of this period gave the City its form.⁴²

The rate of population change for Blackwell has not varied a great deal. Between 1910 and 1920 the City more than doubled its population; however, from 1950 to 1960 the population of the city increased less than 5%. The 1960 census showed a population of 9,588.⁴³

The single-family home is the predominate type of residential structure in Blackwell. This single-family development is characterized by relatively low, evenly distributed population density. The density in Blackwell varies from a minimum of two to a maximum of six families per acre of land within most of the residential areas.⁴⁴

At the present time only 33.8 acres of land are being used for commercial activities in Blackwell. The central business district in Blackwell is located at the intersection of two highways and in the center of an area surrounded by three railroad alignments. Two airports attach themselves to the city, one on the west and one on the south.⁴⁵

Land devoted to public schools, parks and playgrounds and other public uses within the City of Blackwell at present constitutes 7.8 per

⁴² A Plan for Development, Blackwell, Oklahoma, A General Plan of Study, Prepared by the Institute of Community Development, University of Oklahoma, Norman, Oklahoma, November 1960, p. 1.

⁴³ Ibid., p. 9.

⁴⁴ Ibid., p. 19.

⁴⁵ Ibid., p. 26.

cent of the total urban area. It is well co-ordinated with school facilities and neighborhood development policies relating to recreation and educational programs.⁴⁶

Historically, the churches have been located within the residential neighborhoods of the community, and have not been restricted by public regulations. Many older churches were located originally near or within the central business district and even today some are placed within industrial areas. The recent trend, however, is to locate the new churches farther out in the community where more space can be provided. Many of the older churches were located on small parcels of land without adequate parking facilities, yards, or open spaces.⁴⁷

There are several major industries in Blackwell that contribute greatly to the economic strength of the community:⁴⁸

The Blackwell Zinc Company, established in 1916, is a subsidiary of the American Metal Climax, Inc. The annual payroll for its 718 employees is \$4,000,000.00. The products made consist of special grade zinc, die cast metal, cadmium, and cadmium oxide.

The International Milling Company owns Blackwell's large flour mill. Its 45 employees have an annual pay total in excess of \$260,000.00.

The Turvey Packing Company specializes in meat products. There are 100 employees with an average annual pay of \$400,000.00.

The Cities Service L. P. has 26 employees with an average hourly wage of \$2.90 making an annual payroll of \$255,000.00.

⁴⁶A Plan for Development, p. 30.

⁴⁷Ibid., p. 28.

⁴⁸Chamber of Commerce, Blackwell, Oklahoma, Brochure, 1965.

The Acme Foundry and Machine Company produces gray iron, gray iron casting, ductile castings, and general maintenance for Oil Field Equipment. There are 180 employees with an annual payroll of \$850-875,000.00.

The Blackwell General Hospital is fully accredited by a joint commission on hospital accreditation by national recognition. It has 65 hi-low electric beds with piped oxygen to every room and a stand by generator for emergency conditions. It also is completely air conditioned. There are 88 employees working at the hospital with an annual payroll in excess of \$195,000.00. A State approved School for Practical Nursing is held with two classes annually consisting of 12 to 15 students per class. This modern structure was completed in 1954.

The Blackwell Municipal Swimming Pool is located in Memorial Park. Built to olympic standards, the pool was completed in 1949 costing \$180,000.00.

The Blackwell Youth Center also located in Memorial Park was completed in 1955 with a total cost of \$50,000.00. There is a youth director on hand at all times.

The Southwestern Bell Telephone Company completed their new building in November, 1961. It is one of the first direct dialing systems in North Central Oklahoma serving 4800. The total cost of the building was \$700,000.00.

School Background

When the Cherokee Strip country was opened, county officials were appointed and county governments organized, yet no public school funds were available, nor could there be, until taxes could be levied and

funds therefrom collected, which was not possible before late 1894 or 1895. There was nothing to be done by those early settlers, who were eager to get their children's schooling going, except to organize a subscription school.⁴⁹

The Blackwell parents decided to organize such a subscription school and sessions started in November of 1893. The subscription school covered a period of three to four months with an enrollment of 60 to 70 children, mostly in the lower grades.⁵⁰

In the latter part of 1894, Kay County was divided into school districts three miles square, Blackwell being in district No. 45, which number has been retained. By 1895 the district had grown in school population so much that it was formally recognized as being eligible to elect school officials, vote bonds for buildings, levy taxes and issue warrants for teacher salaries, etc.⁵¹

The Blackwell Townsite Company had set aside the east half of Block 300 on South Main for school purposes and the newly elected school board on obtaining title thereto, called an election in which bonds were voted, sold, and a four room frame building was erected on the site. This building was later enlarged, first by four rooms, and still later by two rooms, making it a ten-room school.⁵²

In 1896 a high school department was added to the school system. The first high school classes were held in one of the upper rooms of

⁴⁹Homer S. Chambers, Blackwell and Oklahoma Pioneer, Editor, Teacher, Postmaster, and Author, The Enduring Rock, Blackwell Publications Inc., Blackwell, Oklahoma, 1954, p. 85.

⁵⁰Ibid.

⁵¹Ibid., p. 86.

⁵²Ibid.

the building, a portion of the room being separated from other classes by a muslin partition. At first the high school curriculum consisted of two years work, and the first graduating class of 1898 consisted of just one member. In 1905 the curriculum was extended to four years, there being but one graduate that year.⁵³

The rapid growth of the school enrollment necessitated a fast pace in erecting new buildings to meet such growth. In 1902 a building was erected in about the central part of the city that served for nine years as the high school. In 1911 bonds were voted and a new high school was erected just to the south edge of the business district. Four rooms of an elementary school were also included in this issue. Other bonds voted in subsequent elections provided funds for three more elementary schools and several one-room building here and there to accommodate an enrollment which reached as high as 3,200 in 1927. The high school was admitted to the North Central Association of Colleges and Secondary Schools in 1921, one among the earliest Oklahoma Schools to achieve that distinction.⁵⁴

From that small one-room, one-teacher school back there in 1893-94 the Blackwell School system has grown, expanded and qualified as one of the Cherokee Strip's most outstanding and progressive schools in respect to its buildings, facilities, staff, and teacher personnel.⁵⁵

Today the Blackwell School District has a consolidation of parts of six rural school districts making the total district 30 square miles

⁵³Ibid., p. 86.

⁵⁴Ibid., p. 87.

⁵⁵Ibid., p. 88.

and serves five additional rural schools.⁵⁶

The net valuation for 1964-65 was \$10,893,695.00 with a per capita cost of \$474.14. This cost was computed on an average daily attendance of 2163 students.⁵⁷

School Survey

The new Blackwell Senior High School was not created and built suddenly or spontaneously. It was not built to solve an immediate housing problem due to a growing population, but was built as part of a total building program in the replacement of existing school buildings that in many cases had outlived their usefulness in meeting the educational needs of its youth.

In 1947 the Blackwell Board of Education employed the services of an Evaluation and Study Committee from the University of Oklahoma, College of Education, and directed by Dr. John F. Bender.⁵⁸ This report showed that in 1949 the public school plant of Blackwell consisted of eight schools, an administration building, and other miscellaneous facilities, including a stadium and a warehouse.

Following is a brief description of the several buildings as they appeared in the 1949 survey.

The Washington Elementary School was the largest elementary school in Blackwell but it was not built for elementary school purposes at all.

⁵⁶Blackwell Schools Transportation Report, June 1965.

⁵⁷Annual School Auditor Report, August, 1965.

⁵⁸John F. Bender, Blackwell Public Schools Evaluation Report, University of Oklahoma, Evaluation and Study Committee, January, 1948, p. 1-9.

It was originally the administration building of the Oklahoma Baptist College, now located in Shawnee. Constructed in 1900, the structure was fairly adequate as a small college in terms of standards of that time.

The faults, inadequacies, and obvious need for expensive repairs and remodeling were so apparent that this building was abandoned in 1949 and torn down. After 47 years it had served its usefulness. It was replaced with a modern structure designed to meet the needs of modern elementary education.

The Lincoln School, which was located six blocks west of the center of town, was 36 years old in 1948. It was in fairly good state of repair. While not adequate in terms of modern building standards, it did have some useful service left in it and was continued in use for a few more years.

Park and Riverside Schools were constructed at the same time in 1916-17. They were alike so far as gross structure was concerned. The Park School was located in the northeast part of town and the Riverside School was in the southeast part.

Neither building could be regarded as a modern plant since both lacked many of the attributes of a satisfactory elementary building. The report further indicated that it would be only a comparatively few years before both buildings would have to be replaced. At the time of the survey, it was suggested that both schools be continued in use for perhaps a maximum of eight or ten years.

The South Main School was a frame structure assembled on its site in 1930. It was constructed from an old building. It was an all wood, highly inflammable structure heated by gas stoves in each room. The

foundation was open at many points, rooms were drafty, and it was impossible to heat or ventilate all parts of the room properly. There were no corridors or passageways, and the exits and entrances to each room, while direct to the outside, were such as to invite dangerous congestion in case of the necessity of rapid emptying of the building. Two small toilets, less than ten feet square, with entirely inadequate fixtures for the number of persons served, were located in the center of the building, and were accessible to one classroom only by passage through another classroom.

Blackwell Heights was a one-teacher primary school. The building was a two-room structure, located in the extreme southwestern part of town, in a small, isolated residential area adjacent to the zinc smelter. The building was over 25 years old and generally in a poor state of repair. Again, in terms of modern standards the building was inadequate. Essentially it was no different from a typical rural school. The school had an outside toilet, for example, which was inexcusable for a progressive community in 1947. The one redeeming feature was the adequate site, although the grounds were not well landscaped.

The Blackwell Junior High School was built in 1911. While it made a good outward appearance and was in a fairly good state of repair, it was regarded as a marginal school. It was originally the high school and was taken over for junior high school purposes when the senior high building was constructed. In 1911 it was adequate, but by 1947 it was too small and was located on too small a school site. It did not meet the requirements for a modern junior high school plant.

The principal fault with the building was in the fact that it was designed and constructed for a strictly academic high school program in the days before the modern conception of the junior high school was born. Located in the center of town on a very small site, there was no possibility for expansion of the facilities to include such essentials of a modern junior high school as extensive laboratories, music and art rooms, gymnasia designed for games and recreation, and shops for home and industrial arts and vocational agriculture.

The Blackwell Senior High School was the only modern school plant which the community possessed. It served Blackwell citizens as a reasonable standard of what modern school buildings should be. Built in 1935, it was a well constructed and well maintained plant, adequate in nearly all respects (Figure 2). There was only one major criticism. As was consistently true throughout the system, the site was too small; it was only six acres.

Three generalizations with respect to the elementary school plants were made. First, all the sites were too small with the single exception of the South Main School, and that site was really not very adequate because of the narrow frontage on the street. Second, the heating systems in all of the Blackwell elementary schools were inadequate. No school had a control heating system. Third, the elementary school units were too small.

Based on analysis of the school plant and after careful consideration of all factors involved, the survey committee recommended:

1. That the Washington and South Main Schools be abandoned immediately.
2. That a new elementary building for about 12 teachers be planned on the site of the Washington School.

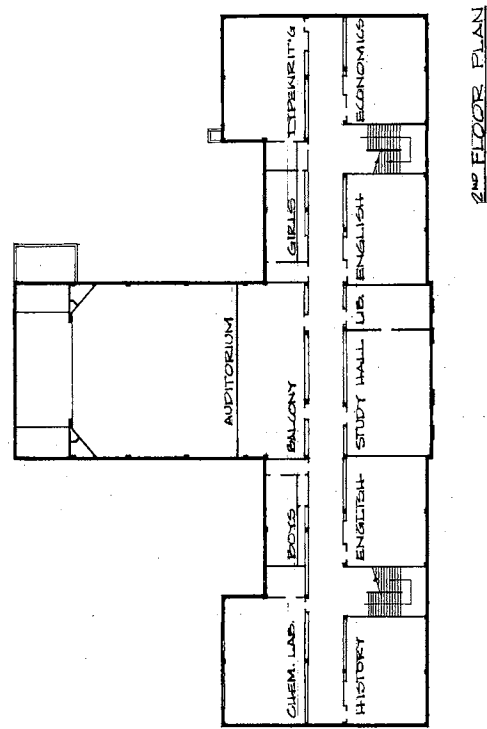
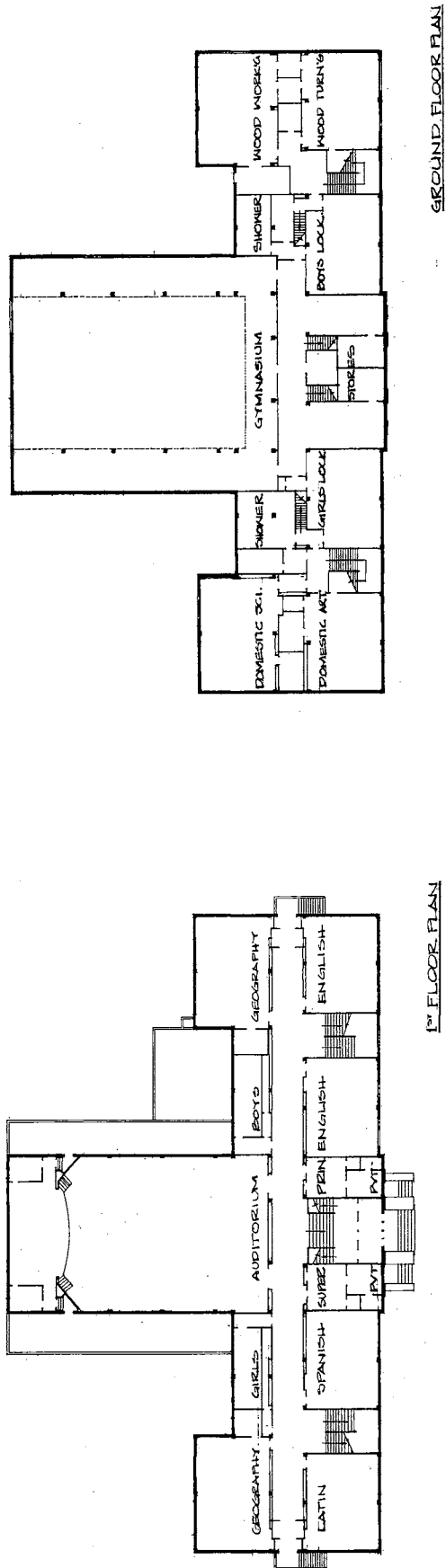


Figure 2. Floor Plan of Old Senior High School

3. That in five years the Lincoln School be abandoned for instructional purposes and the property be converted into an administration building and park.
4. That when the Lincoln School property was converted into a school administration building, the present administration building be abandoned and the property sold for business or civic purposes.
5. That the South Main School be abandoned; that an eight-teacher school be built on a new site with as large an area as possible, and not less than five acres, be obtained at least one block west of the present highway. The committee urged that under no circumstances should the school board construct a new and modern school building in an expanding residential area, on a site with less than five acres.
6. That the Blackwell Heights School be abandoned and the children now attending it be transported by bus to the new South Side School.
7. That the School Board should immediately start making plans to abandon the Junior High School and move it to the present Senior High School building. This should be accomplished within the next 15 years.
8. That the Board of Education should immediately acquire additional frontage along the highway adjacent to the present property at the South Side School and the athletic field in order to develop a property which would be rectangular, or at least symmetrical, in shape. Then it should begin long-range plans to evolve a secondary school. It should be an imposing, adequate structure of which the community can be proud, designed to serve the educational needs of all youth; as these needs exist in the late 1950's and 1960's. It should be the same quality and calibre of plant when it is constructed as the present high school was when it was built in the 1930's. Nothing less should be considered.

Finally, the committee reminded the Board that in the past the errors of Boards of Education in Blackwell appear to have been errors of omission rather than commission, of short-range planning, of penny-wise and pound-foolish policy. The community was paying the price of this short-sighted educational vision.

The Board of Education adopted and immediately started the implementation of the committee's recommendations and as a result the

following major improvements have resulted.⁵⁹

Construction of Huston and Washington Elementary Buildings		
Contractor - Hoke Construction Company	1949	\$ 325,213.58
Installation of new toilet facilities in Lincoln, Park and Riverside and Junior High School	1949	4,105.00
Installation of new heating equipment in Lincoln, Park and Riverside	1949	11,947.95
Construction of stadium and dressing room facilities on North side of Wheeler Huston Field - Contractor - Trapp-Duroy Construction Company	1949	28,797.95
Installation of new furniture in all Elementary classrooms (This replaced the original old furniture in most instances)	1950	19,153.25
Cafeteria at High School - Contractor - Langley Construction Company	1953	42,738.15
Equipment for cafeteria		
Tables and Chairs		3,582.41
Kitchen equipment		12,259.85
Dishes and cooking utensils	1953	1,280.00
New gymnasium - Contractor - Langley Construction Company	1953	210,330.65
Administration Building - Contractor - Langley Construction Company	1953	39,620.00
Additions to Huston School		
Contractor - McAnaw Construction Co.	1954	33,981.00
Parkside Elementary School		
Contractor - J. J. Reardon Const. Co.	1955	206,269.00
Northside Elementary		
Contractor - J. J. Reardon Const. Co.	1956	140,056.00
Huston Second Addition	1956	79,926.00
Washington First Addition	1956	78,872.00
South Stadium Football Field		
Contractor - Lehman-Libbert Const. Co.	1958	34,900.00

⁵⁹American Education Week Bulletin, Blackwell, Oklahoma, A School Publication, November, 1965, N.P.

New High School Construction		
Contractor - Grant C. Carpenter Const. Co.	1962	824,720.82
South Stadium Shops - Grant C. Carpenter Construction, Contractor	1962	<u>33,627.00</u>
TOTAL		\$2,131,380.22

Planning the New School

As a result of this 1948 survey Blackwell began a steady march toward improving their educational facilities. A master plan was developed. Needs, particularly building needs, were outlined and time tables estimated according to the survey.

The elementary schools were listed as first priority. During 1949 to 1957, nine building programs were completed. These included four new elementary schools, and three additions to them, a school administration building, a high school gymnasium and cafeteria addition. By 1957, about three years ahead of schedule, all of Blackwell's elementary children were in new school buildings. In 1958 a new stadium was built and in 1959 planning was initiated for the construction of the new high school.

Two of the new elementary schools received national recognition. The Huston Elementary School won a National AASA -- AIA Award of Merit in 1950. The COLLIERS MAGAZINE published the story entitled "The Little Red Schoolhouse Goes Modern."⁶⁰

These two items of national attention seemed to indicate that Blackwell was on the right track. The patrons continued to back the school as expressed by the overwhelming approval of bond issues.

⁶⁰ A Brochure by Caudill, Rowlett, Scott Architects, February 1963, N.P.

Several of the planners of the new Blackwell High School had participated in some of the previous building activities. The five-member Board of Education had a total of 21 years service on the Board which overlapped several of them into the previous building programs. The Superintendent of Schools, Leonard White, graduated from the Blackwell High School and then returned to the school system as a teacher, junior high principal, and superintendent. The Architects, Caudill, Rowlett & Scott started with the first master plan and building program in 1949, and served the district continuously on each successive building program. A large number of the teachers who helped plan the new school had many years of service in the Blackwell School system.

It should first be stated that the planning did not start with a list of ideas, goals or problems to solve. The planning started with a search for ideas!

The planning group was composed of the Board of Education, the superintendent and the architects from the very beginning. They all started together and progressed together. They were supplemented many times by teachers, students, administrative staff and local citizens.

The first step in searching for ideas was to organize the team as mentioned above. The next step was for this team to begin its search. The search was conducted through brainstorming discussions, visits to other schools, educational literature and publications, correspondence with other schools trying new ideas, educational conferences, teachers' conferences, student council meetings and finally evaluative studies of present methods and systems in the existing Blackwell High School. Many ideas originated in answer to the stating of an existing problem.

The basic objective was not to make changes. The basic objective

was to analyze the present systems and methods, compare with newer ideas, and make changes where they appeared to be needed.

The final program was a written document⁶¹ attempting to list ideas, philosophies, educational concepts, space analysis and a feasibility study.

Some significant excerpts included:

. . . Although goals may remain the same, the methods and procedures for attaining them must change with the needs of the times. This places truth in the expression, "They didn't do it this way when I went to school."

. . . The library should be the center of all academic activities--easily reached, readily accessible, inviting, stimulating and pleasant. Its use should be encouraged. This would permit an academic area with a Library Centered Curriculum.

. . . Consideration should be given to:
 (a) Large group, small group, and individual areas; and
 (b) Master teacher teaching.

These theories provide methods of creating learning situations which permit improved individual progress through better time scheduling, which, in turn, allows for exposure to improved and more inspirational teaching, discussions with smaller groups, and individual study and tutoring.

. . . One other requirement of the student as an individual is a Home Base. He should have a place of his own, lest he be lost in the masses. "Student lockers" and "homerooms" have satisfied this need in the past. Consideration was given a better solution to the Home Base--a sort of combination of lockers and homeroom; specifically a combination desk with "locker" drawers. This should be located in the library area or adjacent to it for good accessibility. This would encourage periods of individual study, use of library facilities, periods during which the individual could consult with his teachers, etc.

. . . Each department or group of departments should have a focal point--a Departmental Center. The purpose of this center would provide a spot where the teachers and students of similar interest could meet, study, confer, and plan. A very logical spot for this departmental library-office cluster would be between the department and the main library.

⁶¹Planning Notes and Records for Superintendent's Personal Files, 1959-60.

. . . The campus type plan was explored for many reasons, particularly educational, and was preferred for the new school.

. . . Provisions should be made for closed circuit TV. Arrangements should be made for cataloging, filing and storing of materials, and for their preparation. The cataloging, filing, and storing should be under the administrative control of the librarian.

. . . Student comfort is important. Therefore all academic spaces, auditorium, and cafeteria should be air-conditioned.

. . . Long range economics should be considered in the design and material selections, rather than initial economy. Buildings should be functional and of good quality.

The design team of five architects and engineers spent a concentrated week in Blackwell. Virtually working around the clock, they studied many possible solutions to the problems posed by the program, and had frequent discussions with Superintendent White, School Board members and teachers. At week's end, all were agreed to a "concept design."⁶² (Figures 3 and 4)

It was not a matter of original concern that the new school just provide more space for a given number of people. The Board wanted an economical school, not in terms of how little money would be necessary, but in terms of the wisest investment of dollars.

It was also determined that every means possible should be employed to investigate and study what was going on in education across the nation. The Board made it a part of their responsibility to visit other schools, particularly new schools of special interest. The administration and faculty were also sent on many and varied observational missions. In addition to visitations the Board, administration, and faculty attended meetings, conferences and workshops always on the

⁶²Planning the New Blackwell Senior High School, Caudill, Rowlet, and Scott Architectural Firm, November 23, 1960, N.P.

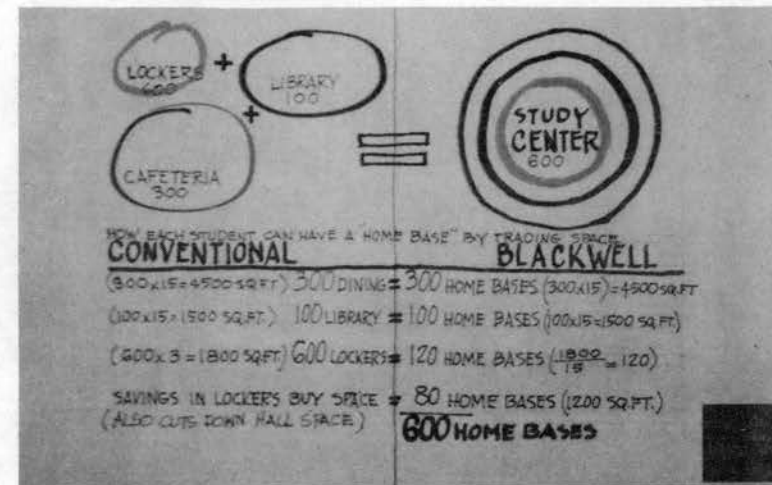
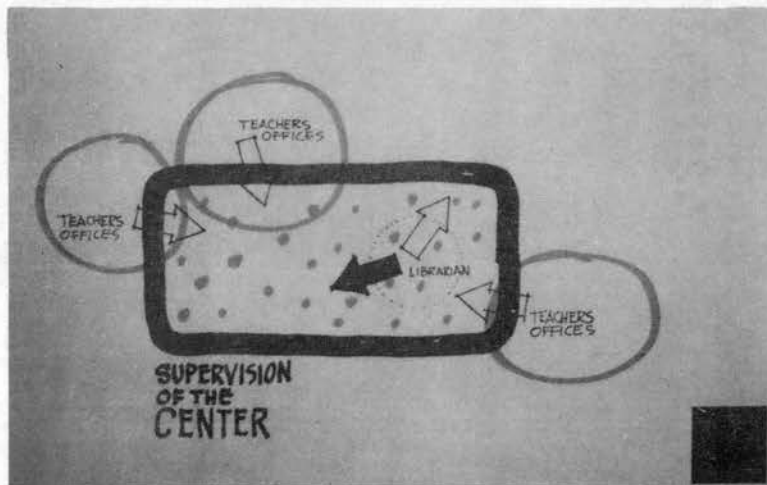
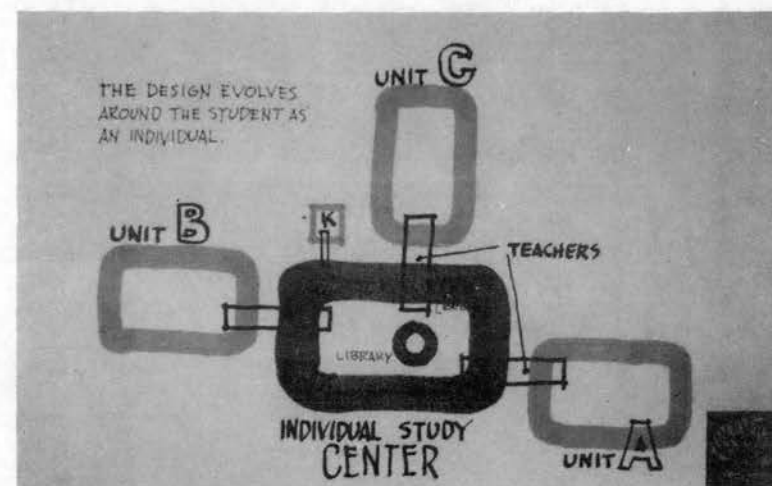
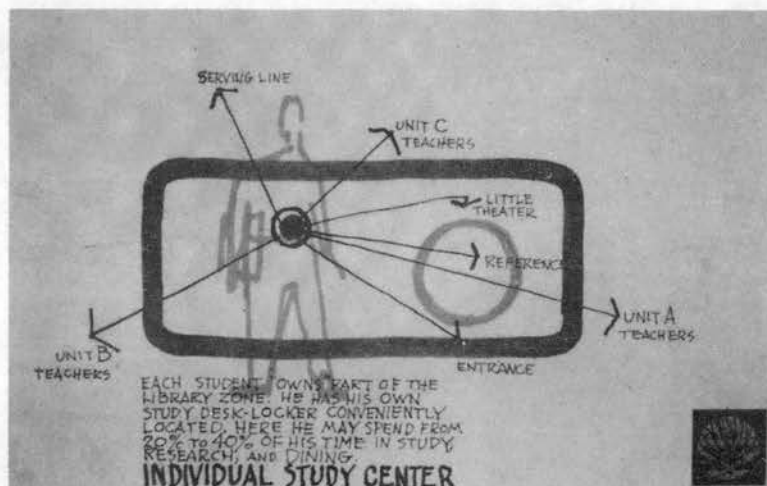


Figure 3. Design Concepts of the New Senior High School

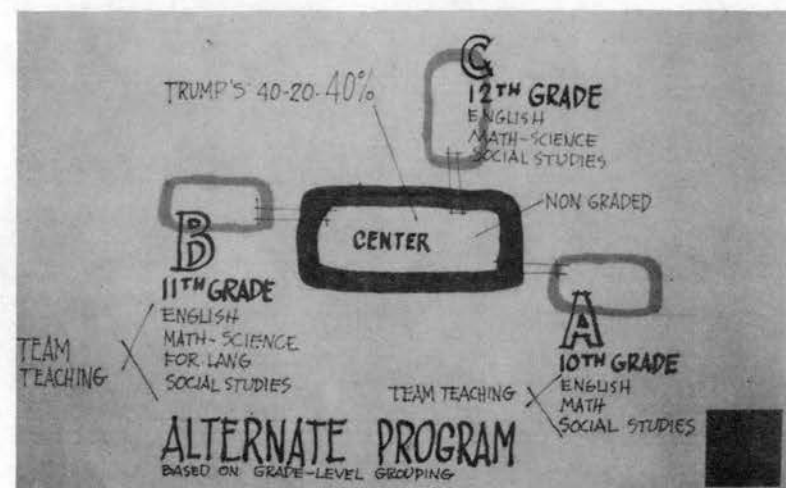
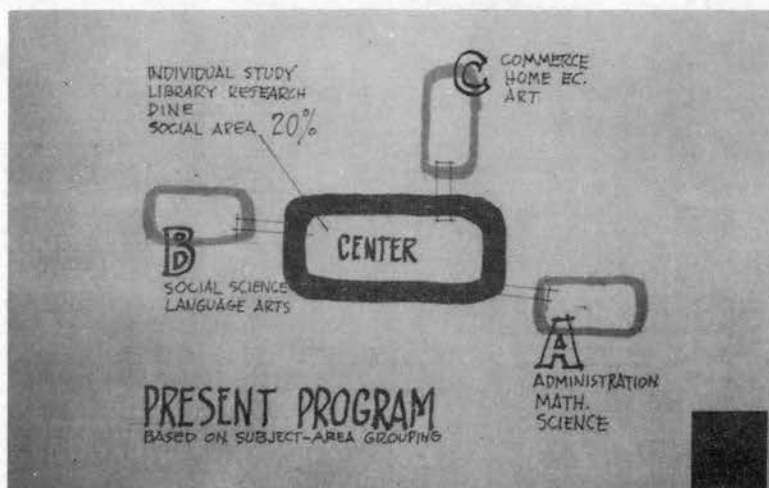
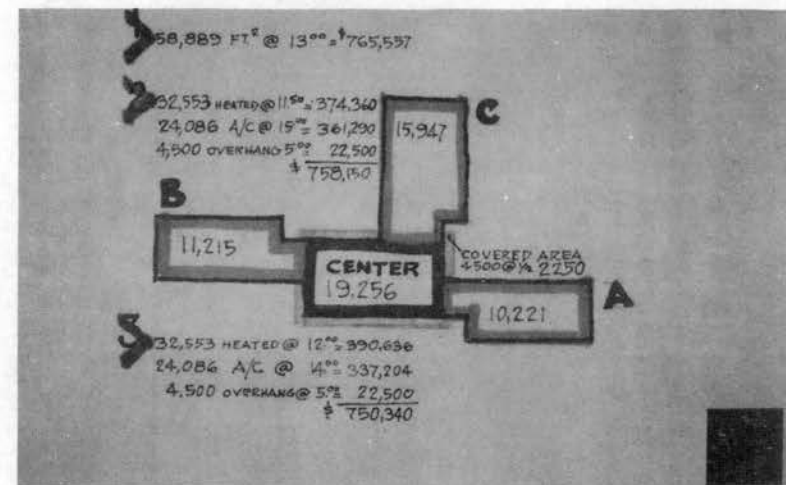
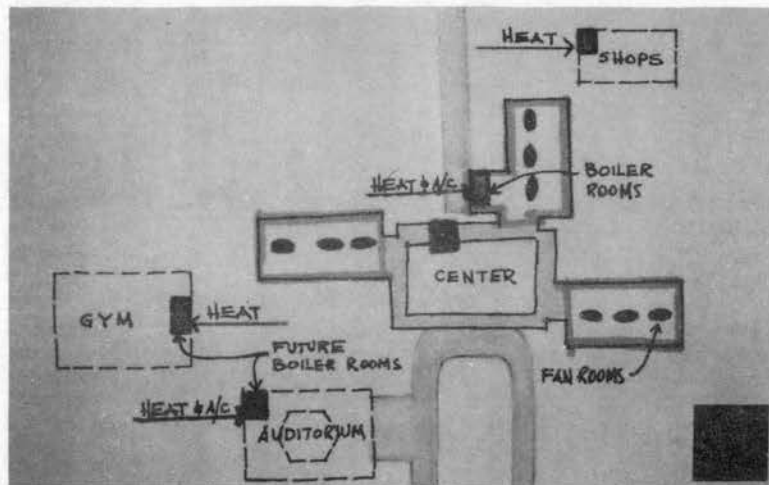


Figure 4. Design Concepts of the New Senior High School.

look for new ideas. Reading was the common denominator; everyone read and exchanged articles of interest.

All during this investigation period the architect was involved. In fact at the very beginning of this planning period, the Board of Education employed an architect consultant to participate in the study in order that communications would not be a problem later. Design concept and architecture were not of concern in the very beginning. The whole philosophy was to develop the curriculum first, then put a frame around it.

From the outset the faculty was brought into close relationship with the architect. A questionnaire was presented the faculty very early in this planning period, which asked them to dream a little. In fact the questionnaire stated: "If you could dream of a perfect instructional environment, and money was not a factor, what would you dream?" The responses were correlated from this "dream" concept into a small booklet. The architect interpreted these "dreams" into specific areas, and then a schedule of conferences followed. Each teacher, secretary, administrator, cook and custodian was conferenced from one to six times. From these conferences the architect was educated about education. He learned from the English teacher what was new in Language Arts; he learned from the Science teacher what was going on in high school science; and he learned from the Librarian the purposes and functions of a good library, etc. Trends and technology became natural points of discussion.

After the current curriculum was evaluated, the analysis became the basis for the new curriculum. The architect aided in this analysis. After definite trends, technology, innovations, and finance were

established, only then did the architect start to plan the building. By his constant personal communications with the Board, administration, and faculty it was less difficult when the time arrived for him to put the "frame around the curriculum." In planning the new high school, the Board of Education adopted a criteria which consisted of six basic and relevant questions.⁶³

1. Should much consideration be given to preliminary curriculum planning by Board, administration and faculty?
2. To what extent should studies be made of other new high schools?
3. To what extent should local curriculum needs be analyzed?
4. To what extent should studies be made of new trends in education?
5. To what extent should the architect be a part of early educational planning?
6. What sort of a time schedule should be set for study, financing, and building?

The Board of Education methodically followed these six basic criteria and finally formalized a philosophy regarding the new school that consisted of the following thirty general assumptions.⁶⁴

1. High school students can assume more individual responsibilities if permitted to do so.
2. Building facilities can relieve teachers of much supervisory responsibility.
3. Students can be motivated through architectural design.
4. Teachers can do better teaching if allowed time for preparation in an environment conducive to planning.
5. In-service activities can be perpetuated through an arrangement of teachers' offices.

⁶³Planning the New Blackwell Senior High School, N.P.

⁶⁴Ibid.

6. Students will use the library more if it is well located and attractive.
7. Large group instruction can be accomplished through closed-circuit television.
8. Hall lockers provide an undesirable hall environment.
9. Halls can be pleasant areas in a building through acoustics, beauty, and glass.
10. Classrooms can be displayed by using glass interior walls. This visual arrangement should reduce anxiety level for students in the classrooms.
11. A functional design should encourage classroom participation.
12. A building planned and built to provide maximum opportunities for the academically interested student should also stimulate others.
13. A building designed to be "kid proof" places many unfair limitations on students.
14. Students need to develop better study habits at school. A certain place at a certain time for a certain purpose will do much for this habit.
15. Comfortable and convenient facilities can promote good study habits.
16. Home-base units can be designed and located to improve study habits and locker accommodations.
17. Classroom furniture can encourage study.
18. Outside snack-bar and social areas can promote social relations and adjustments.
19. Physical aspects of a building, such as light, acoustics, and climate can provide a comfortableness for teachers and students.
20. Monotony can be reduced by varying the design of the building.
21. A campus plan is suitable for the site.
22. An Office of Activity Director can relieve classroom teachers of much extra-curricular load.

23. Counseling services will be more widely used if the counselor's office is well located in a functional area.
24. A basement can provide storm protection and be an all-purpose auditorium area.
25. Students can eat at home-bases if the serving process is adequate.
26. A study center where students can eat at home-base units will eliminate the need for a separate cafeteria area.
27. Many additional facilities can be provided with the money saved by eliminating the separate area for a cafeteria.
28. Attendance will be better if environment is better.
29. Dropouts will be fewer if environment is better.
30. Discipline will be better if environment is better.

On November 2, 1959, the Board of Education signed a contract with Caudill, Rowlett, and Scott Architects, Oklahoma City, Oklahoma, to do the architectural work on the new school.⁶⁵

Sealed bids were opened on September 7, 1961, from ten different contractors ranging from \$858,347.42 to \$986,598.00.⁶⁶

The new school was occupied in the fall of 1962 and the dedication ceremonies were held on January 6, 1963.⁶⁷

⁶⁵School Board Minutes, November 2, 1959.

⁶⁶School Board Minutes, September 7, 1961.

⁶⁷Blackwell Senior High School Dedication Brochure, January 6, 1963, N.P.

Financing the New High School

Financing this new high school at an earlier date than was originally planned meant breaking one bond issue up into two smaller issues. Because of the immediate need for better and more suitable junior high school facilities the new high school building date was moved from 1963 to 1961. Since the school district was still paying on the elementary school bonds any new indebtedness had to be within the limits of school district indebtedness as prescribed by law. The state law limits the bonded indebtedness of a school district to 10 percent of its net valuation (after homestead exemptions). Consequently, in 1961 it was only possible to vote \$720,000.00 for new school construction. This amount, plus the sale of the junior high school building for \$90,090.90 and \$46,310.67 from the building fund, allowed construction of the new building in the amount of \$856,401.57. If the new school had waited until 1963, one bond issue of \$870,000.00 would have been voted upon for the buildings, land, furniture, and equipment. However, this would have extended the junior high school problem this much longer. By voting a smaller issue in 1961 a new building was possible. A \$150,000.00 issue for the furniture, equipment, and land requirements was voted in March of 1962. This plan also saved interest.⁶⁸

The planning of two separate bond issues did not increase taxes since the elementary school bonds were retiring sufficiently to allow for a later issue.

⁶⁸Planning Notes and Records from Superintendent's Files, 1961-62.

A review of the bonded indebtedness of the school district showed that on March 1, 1962, the following financial condition existed.⁶⁹ The limit of bonded indebtedness based on 1962 net assessed valuation was \$985,053.50 (Indebtedness of a school district is based on the net valuation). (Net valuation is after deducting homestead exemption.)

Bonds Outstanding 12-31-61	\$938,000.00
Sinking Fund Reserve	<u>158,184.00</u>
Net Bond Debt	779,816.00
1962 Bond Issue	<u>150,000.00</u>
TOTAL	\$929,816.00

1962 Sinking Fund Requirements	\$ 19,847.00
Interest earned on Bond Investments	<u>6,376.42</u>
	\$ 26,233.42

Sinking Fund Requirements after 2-1-63 was less since 1953 Bonds retired.	\$ 30,000.00
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1962 Bond Issue of \$150,000.00 in ten payments required a first annual maturity (including interest) of:	\$ 19,500.00
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1961 Levy of 12.557 mills on \$9,850,535.00 valuation	\$123,624.21
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Annual maturity requirements dropped from \$123,624.21 in 1961 to approximately \$77,000.00 in 1964 which included the \$150,000.00 bond issue in 1962. This meant that the levy dropped from 12.557 to approximately 7.54 mills based on the same net assessed valuation. As the valuation increased the levy decreased. The sinking fund levy was 12.026 mills in

⁶⁹ Planning Notes and Records from Superintendent's Files, 1961-62.

1956 on \$7,461,746.00 valuation but dropped to 5.835 mills in 1960 on a \$9,079,453.00 valuation.

At the same time that the Board of Education reviewed its bonding strength it also summarized its requirements and income as follows:⁷⁰

Requirements:

Entrance Drive, Walks and Parking Area	\$ 16,500.00
Southwest Parking Area	18,500.00
Landscaping and Fencing	3,000.00
Furniture and Equipment	99,515.00
Remodeling Old High School	30,000.00
Additional Property	50,000.00
Building Contract with change orders 1 & 2	856,401.57
Architect Fee Balance	10,776.46
Miscellaneous Needs After Moving	<u>14,700.91</u>
	\$1,099,394.29

Income:

Bond Issue 1961	\$ 720,054.29
Bond Issue 1962	150,000.00
Sale of Junior High Property	90,090.00
Building Fund 1961 Balance	90,000.00
Building Fund 1962	<u>49,250.00</u>
	\$1,099,394.29
N.D.E.A. Title III Matching Funds	\$ 26,625.16

⁷⁰Planning Notes and Records from Superintendent's Files, 1961-62.

The Board further adopted a tentative budget for the purchase of furniture and equipment which incidentally later became the permanent budget. A breakdown of the budget follows:⁷¹

Science Labs.	\$ 25,968.12	\$ 12,984.06
Math Labs.	6,532.00	3,266.00
Language Lab.	8,749.00	4,374.00
T. V. Equipment	6,000.00	3,000.00
Shop	4,995.12	4,995.00
Gym	5,000.00	5,000.00
Study Center	18,125.00	18,125.00
Library	4,946.60	4,946.60
Kitchen	7,416.66	7,416.66
Classrooms	22,934.57	22,934.57
Offices and Conference Rooms	10,473.45	10,473.45
Little Theater	5,000.00	5,000.00
	\$126,140.52	
	<u>99,515.36</u>	
	\$ 26,625.16	N. D. E. Title III Funds

What the New High School Is Like

The large Individual Study Center, surrounding a centrally-located library, is the hub of the school. Every student has his own "home-base" (Figure 5) located in this Individual Study Center area. His academic locker is built into his home-base. The library (Figure 5)

⁷¹Planning Notes and Records from Superintendent's Files, 1961-62.



Figure 5. A. Library B. Study Center

provides him with immediate access to all kinds of materials, including reference books, tapes, records, films, and reading improvement courses. Three small sound-proof booths in the library, equipped with speed-reading machines, tape recorders, and record players, provide the students individual opportunities for learning from technical aids.

Leading from this large Individual Study Center area are three classroom wings (Figure 6). One wing houses the Science and Mathematics Laboratories; another houses Language Arts, Language Laboratory, and Social Studies; and the third is the home for the Home Economics, Commerce, and Art Departments. Each wing has a departmental teachers' office area with a small conference room and work room. This provides an opportunity for teachers to live and work together as well as to work individually. A self-perpetuating in-service experience is one of the advantages of this arrangement. The "Little Theatre" in the basement below the Center makes possible large group instruction; the teachers' classroom and conference rooms make small group instruction feasible; and the teacher's individual office arrangement makes individual help to students possible. Furthermore, any teacher may divide her class into as many as four divisions. One division may be sent to the Center for individual research study and be under the supervision of the Center Director; another group may remain in the classroom for seminar work with a student chairman; another division may be taken to the departmental conference room; and simultaneously the teacher may counsel an individual student in her office.

The classroom-hall walls are glass which puts every classroom on display. Indoor botanical gardens (Figure 7) located in the halls limit the view between classrooms.

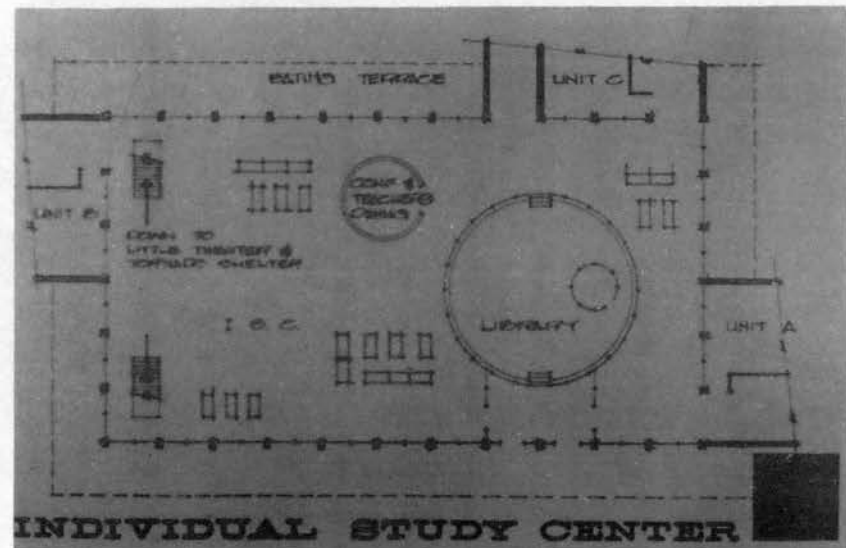
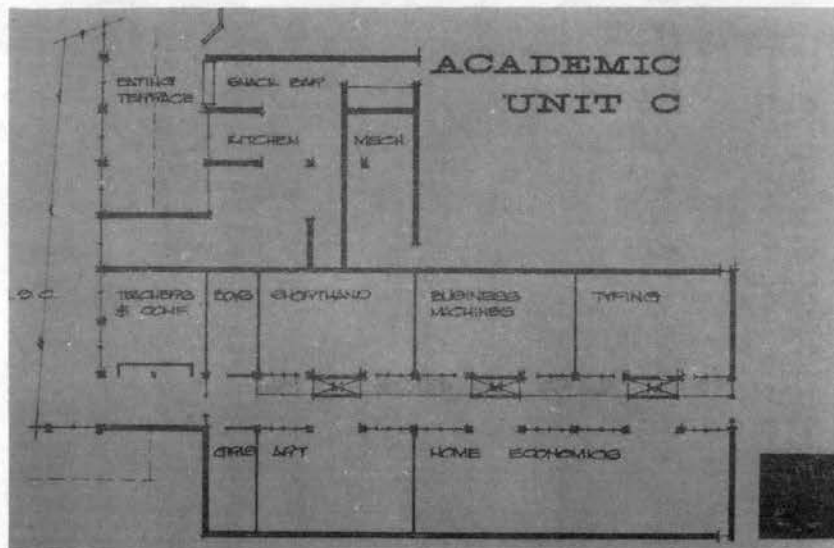
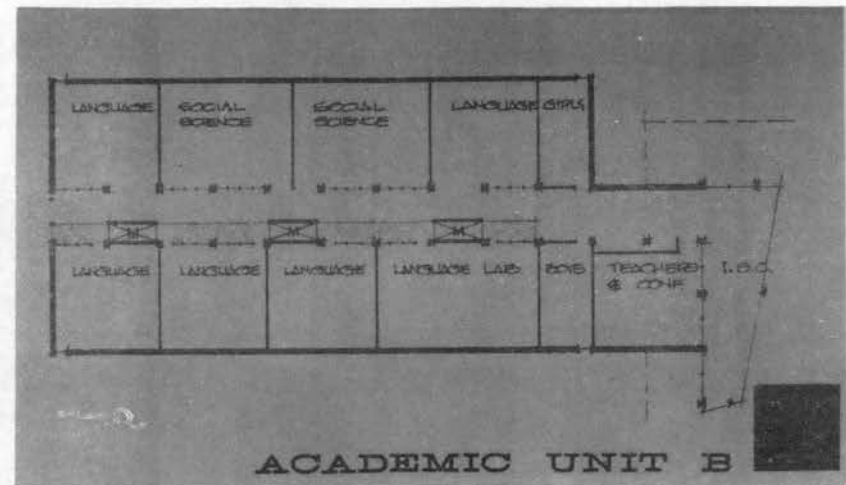
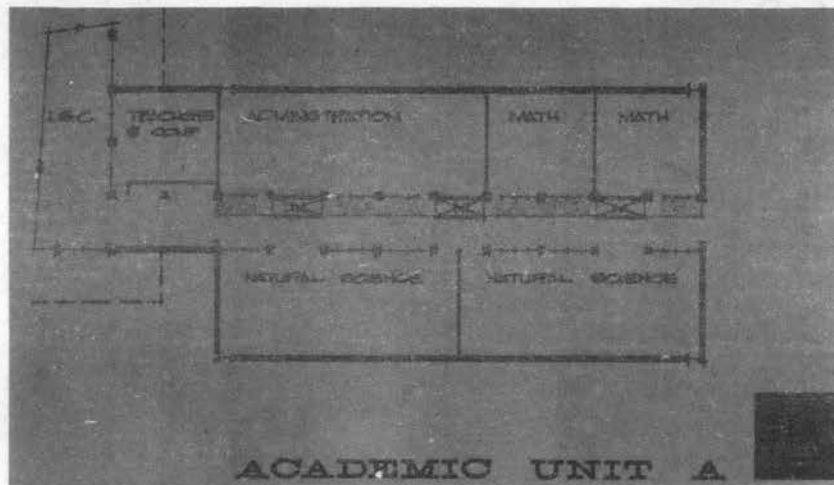


Figure 6. Floor Plan of the New Senior High School.

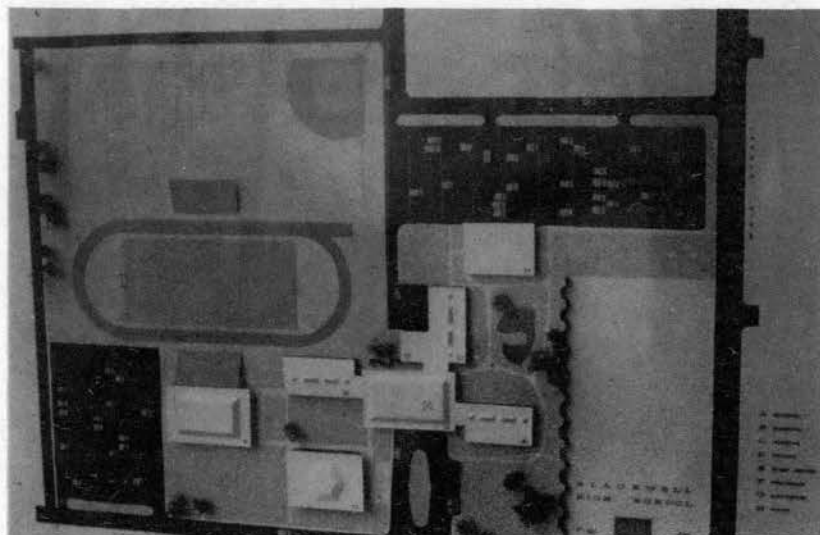


Figure 7. A. Model Plan of New Senior High School B. Botanical Gardens

Closed circuit television makes it possible to view any classroom throughout the school. A portable camera can be operated from any room. The activities from the broadcasting room can be received in any of the other rooms on a receiver set located in each room. Also films may be shown via this method and several rooms may receive the same film simultaneously. Special resource programs can also originate from the Little Theatre and be broadcasted throughout the building.

The building is designed for comfort. It is air-conditioned and well lighted. Color and acoustics also have their influence on discipline.

Good planning must include good organizing. As a result, teachers teach five periods and have one for planning. An Activity Director assumes the responsibility for the teachers' usual activity loads. A Counselor directs the enrollment of every student. A secretary in the Administration Office operates a test grading machine which automatically scores objective tests.

The monotony of the day is broken by the architectural design of the building. Each wing has solid outside walls, but glass for inside walls which permits each classroom to overlook the green botanical gardens in the hall area. As a student passes from the academic wings into the Center he experiences a new environment (since the Center is enclosed in glass). The school is built on a campus plan (Figure 7) with the academic subjects in one building.

Profile of the New High School

Superintendent - Leonard L. White

School Board - Chester Brewster, Robert Bersche, Jack Bell, Clyde Hukills, and Elmore Bathurst

Architects - Caudill, Rowlett, & Scott

Contractor - Grant C. Carpenter Company, Oklahoma City, Oklahoma

Source of Revenue - Bond Election 1961	\$ 720,000
Bond Election 1962	150,000
Sale of Property	90,000
Annual Building Levy	
Fund	<u>46,310</u>
	\$1,006,400

Cost: Basic Building \$ 858,347.82 = Approx. \$13.50
per sq. ft.

Architectural Fees	51,486.59
Estimate Total of Furniture and Fixtures	123,450.00
Actual Cost-Television	12,519.95
Language Laboratory	8,447.50
Science Laboratory	20,317.70
Math Laboratory	6,165.00
Parking Lot	9,550.00

Approximate total cost of new building,
parking lot and furnishings.
(No land or football facilities) \$1,042,834.41

Square feet of floor space:	Academic Wings	31,948
	Study Center and Library	12,936
	Basement Area	4,879
	Kitchen	<u>3,136</u>
		52,899
	Gym	10,416
	Shop (Under South Stadium)	<u>4,760</u>
	TOTAL	68,075

19 Classrooms plus Little Theatre Auditorium

32 Acre campus encompassing an academic building, a gymnasium, a wood-working shop, two stadiums, a football field and track, a parking lot, a band marching area, a football practice area, and two baseball practice fields.

The final step in the 15-year improvement program will be the addition of an auditorium, a vocation building, and a gym expansion.

Evaluation of the New High School

An assessment of this new school was made by examining certain personal letters and published articles in newspapers and magazines subsequent to the opening of the school. (See Appendix B)

CHAPTER IV

EFFECTIVENESS OF NEW HIGH SCHOOL

Introduction

Data presented in this chapter was obtained from 468 students in the Blackwell High School. Classification of students by grade level was used for purposes of statistical treatment. The school is organized on a three year plan. There were 156 sophomores in their first year, 143 juniors in their second year, and 169 seniors in their third year in the new school.

After data was secured through the previously outlined procedures and techniques, data was tabulated and analyzed by an appropriate statistical technique (chi-square) in order to determine the nature and extent of the findings.

To establish fiduciary limits, the five percent level of confidence was selected to be significant. If statistical treatment confirmed that differences did not exist at this level the null hypothesis relative to the selected statements was not rejected.

This part of the chapter represents the investigator's endeavor to examine critically the statements in each area selected for this study. The findings concerning these statements are presented in tables with an accompanying analysis.

Each statement in the measuring instrument was considered to be important in its relationship to the unique characteristic area being

tested. Furthermore, each statement was considered to be important independently in eliciting specific responses within a characteristic area.

Procedure Used in Analyzing Instrument Data

In order for there to be a uniform and systematic analysis of data, sixteen of the fifty-five statements used in the instrument were adjusted (reversed) since these statements were constructed in the negative sense. This was done to make all statements read in the same direction on the continuum. By adjusting statements in this manner the direction of all responses would agree as to favorable or unfavorable. Responses marked "undecided" were not affected. Statements numbering 2, 3, 7, 9, 12, 13, 16, 18, 21, 23, 24, 25, 30, 40, 51, and 55 were adjusted (reversed).

The prediction was that students enrolled in different grade levels would differ in their opinions regarding certain unique characteristics in the new high school building. This was computed by classifying the students (Sophomores, Juniors, Seniors) and determining the opinion responses of each class.

Null Hypothesis: There will be no significant differences in the opinion responses between classes regarding characteristics in the new high school.

Statistical Test: Since the groups under study were independent and the data was in discrete categories, the X^2 test was appropriate.

Level of Significance: Let $p = .05$, $N = 468$, the total population observed. (Sophomores = 156; Juniors = 143; Seniors = 169)

Sampling Distribution: Under the null hypotheses, X^2 as computed from formula was distributed approximately as Chi Square with $df = (k - 1) (r - 1)$.

- Region of Rejection: The region of rejection consisted of all values of X^2 which were so large that the probability associated with their occurrence under the null hypotheses was equal to or less than $p = .05$.
- Decision: In the tables that follow the observed response frequencies are categorized according "Strongly Agree," "Agree," "Undecided," "Disagree," and "Strongly Disagree." The size of X^2 reflects the magnitude of the discrepancy between the opinions of the classes.

School Board Assumptions

The areas of this investigation corresponded to the assumptions made by the Board of Education in their planning of the new school. Not all of the original assumptions were incorporated into this study but an attempt was made in structuring the opinionnaire to recognize the major ones. Statements were designed to elicit intuitive comparisons between the old and new schools. Students were asked to respond to statements pertaining to the following School Board assumptions.

SCHOOL BOARD ASSUMPTION I, (STATEMENTS 1-55)

THAT THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL WILL BE
MORE ACCEPTABLE TO STUDENTS IN THE SENIOR CLASS
THAN THOSE IN THE JUNIOR CLASS

TABLE II

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL

Class	SA	A	U	D	SD	Total
Senior	1958	3203	1654	1556	923	9294
Junior	1706	2994	1296	1305	588	7889
Total	3664	6197	2950	2861	1511	17183

$$X^2 = 49.563$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that these characteristics were not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the total characteristics. The distribution of the responses showed that the students in

the Junior class favored the total characteristics more than the Senior class. The students in the Junior class favored the total characteristics by a ratio of 2.577 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.178 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the total characteristics upon their acceptance of the new school.

SCHOOL BOARD ASSUMPTION II, (STATEMENTS 1-55)

THAT THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL WILL BE
MORE ACCEPTABLE TO STUDENTS IN THE JUNIOR CLASS
THAN THOSE IN THE SOPHOMORE CLASS

TABLE III

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL

Class	SA	A	U	D	SD	Total
Junior	1706	2994	1296	1305	588	7889
Sophomore	2245	3249	1418	1180	591	8683
Total	3951	6243	2714	2485	1179	16572

$$\chi^2 = 57.812$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that these characteristics were not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the total characteristics. The distribution of the responses showed that the students in the Sophomore class favored the total characteristics more than the Junior class. The students in the Sophomore class favored the total characteristics by a ratio of 3.071 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 2.577 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the total characteristics upon their acceptance of the new school.

SCHOOL BOARD ASSUMPTION III, (STATEMENTS 1-55)

THAT THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL WILL BE
MORE ACCEPTABLE TO STUDENTS IN THE SENIOR CLASS
THAN THOSE IN THE SOPHOMORE CLASS

TABLE IV

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING THE TOTAL CHARACTERISTICS OF THE NEW SCHOOL

Class	SA	A	U	D	SD	Total
Senior	1958	3203	1654	1556	923	9294
Sophomore	2245	3249	1418	1180	591	8683
Total	4203	6452	3072	2736	1514	17977

$$X^2 = 141.924$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that these characteristics were not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the total characteristics. The distribution of the responses showed that the students in

the Sophomore class favored the total characteristics more than the Senior class. The students in the Sophomore class favored the total characteristics by a ratio of 3.071 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.178 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the total characteristics upon their acceptance of the new school.

SCHOOL BOARD ASSUMPTION IV, (STATEMENTS 1-7)

THAT CLASSROOMS WITH GLASS INTERIOR WALLS WILL BE MORE
ACCEPTABLE TO STUDENTS IN THE SENIOR CLASS
THAN THOSE IN THE JUNIOR CLASS

TABLE V

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING CLASSROOMS WITH GLASS INTERIOR WALLS

Class	SA	A	U	D	SD	Total
Senior	177	461	145	296	104	1183
Junior	123	413	151	234	80	1001
Total	300	874	296	530	184	2184

$$\chi^2 = 7.743$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the glass wall characteristic. The distribution of the responses showed that the students in the Junior class favored the glass wall characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 1.707 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.595 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the glass wall characteristic upon classroom attention, self-consciousness, shut-in feeling, curiosity outside classroom, and spaciousness.

SCHOOL BOARD ASSUMPTION V, (STATEMENTS 1-7)

THAT CLASSROOMS WITH GLASS INTERIOR WALLS WILL BE MORE
ACCEPTABLE TO STUDENTS IN THE JUNIOR CLASS THAN
THOSE IN THE SOPHOMORE CLASS

TABLE VI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING CLASSROOMS WITH GLASS INTERIOR WALLS

Class	SA	A	U	D	SD	Total
Junior	123	413	151	234	80	1001
Sophomore	183	381	172	252	105	1093
Total	306	794	323	486	185	2094

$$X^2 = 14.447$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the glass wall characteristic. The distribution of the responses showed that the students

in the Junior class favored the glass wall characteristic more than the Sophomore class. The students in the Junior class favored this characteristic by a ratio of 1.707 favorable to one unfavorable. The students in the Sophomore class were less favorable with a ratio of 1.584 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the glass wall characteristic upon classroom attention, self-consciousness, shut-in feeling, curiosity outside classroom, and spaciousness.

SCHOOL BOARD ASSUMPTION VI, (STATEMENTS 1-7)

THAT CLASSROOMS WITH GLASS INTERIOR WALLS WILL BE MORE
ACCEPTABLE TO STUDENTS IN THE SENIOR CLASS THAN
THOSE IN THE SOPHOMORE CLASS

TABLE VII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING CLASSROOMS WITH GLASS INTERIOR WALLS

Class	SA	A	U	D	SD	Total
Senior	177	461	145	296	104	1183
Sophomore	183	381	172	252	105	1093
Total	360	842	317	548	209	2276

$$\chi^2 = 9.990$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the glass wall characteristic. The distribution of the responses showed that the students in the Senior class favored the glass wall characteristic more than the Sophomore class. The students in the Senior class favored this characteristic by a ratio of 1.595 favorable to one unfavorable. The students in the Sophomore class were less favorable with a ratio of 1.584 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the glass wall characteristic upon classroom attention, self-consciousness, shut-in feeling, curiosity outside classroom, and spaciousness.

SCHOOL BOARD ASSUMPTION VII, (STATEMENTS 8-14)

THAT UNIQUE CORRIDORS WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE JUNIOR CLASS

TABLE VIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING UNIQUE CORRIDORS

Class	SA	A	U	D	SD	Total
Senior	346	416	169	171	81	1183
Junior	276	398	120	144	66	1004
Total	622	841	289	315	147	2187
$\chi^2 = 6.585$ $P.05 = 9.49$ $df = 4$						

The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the unique corridor characteristic. The distribution of the responses showed that the

students in the Junior class favored the unique corridor characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 3.256 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.023 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the unique corridor characteristic upon self-consciousness, rushing in the halls, teacher supervision, acoustics, spaciousness, and freedom of movement.

SCHOOL BOARD ASSUMPTION VIII, (STATEMENTS 8-14)

THAT UNIQUE CORRIDORS WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE JUNIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE IX

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING UNIQUE CORRIDORS

Class	SA	A	U	D	SD	Total
Junior	276	398	120	144	66	1004
Sophomore	336	442	128	132	55	1093
Total	612	840	248	276	121	2097

$$x^2 = 6.195$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the unique corridor characteristic. The distribution of the responses showed that the students in the Sophomore class favored the unique corridor characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 4.155 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 3.256 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the unique corridor characteristic upon self-consciousness, rushing in the halls, teacher supervision, acoustics, spaciousness, and freedom of movement.

SCHOOL BOARD ASSUMPTION IX, (STATEMENTS 8-14)

THAT UNIQUE CORRIDORS WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE X

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR OPINIONS
CONCERNING UNIQUE CORRIDORS

Class	SA	A	U	D	SD	Total
Senior	346	416	169	171	81	1183
Sophomore	336	442	128	132	55	1093
Total	682	858	297	303	136	2276

$$X^2 = 13.043$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the unique corridor characteristic. The distribution of the responses showed that the

students in the Sophomore class favored the unique corridor characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 4.155 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.023 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the unique corridor characteristic upon self-consciousness, rushing in the halls, teacher supervision, acoustics, spaciousness, and freedom of movement.

SCHOOL BOARD ASSUMPTION X, (STATEMENTS 15-18)

THAT HOME-BASE DESKS WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE JUNIOR CLASS

TABLE XI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING HOME-BASE DESKS

Class	SA	A	U	D	SD	Total
Senior	211	240	92	56	77	676
Junior	198	214	56	59	45	572
Total	409	454	148	115	122	1248

$$\chi^2 = 10.533$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the home-base desk characteristic. The distribution of the responses showed that the students in the Junior class favored the home-base desk characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 3.961 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.390 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the home-base desk characteristic upon adequacy of locker facilities, studying, sharing desk with others, and utilization of library.

SCHOOL BOARD ASSUMPTION XI, (STATEMENTS 15-18)

THAT HOME-BASE DESKS WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE JUNIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING HOME-BASE DESKS

Class	SA	A	U	D	SD	Total
Junior	198	214	56	59	45	572
Sophomore	225	228	84	40	47	624
Total	423	442	140	99	92	1196

$$x^2 = 9.208$$

$$P.05 = 9.49$$

$$df = 4$$

The x^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of x^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the home-base desk characteristic. The distribution of the responses showed that the students

in the Sophomore class favored the home-base desk characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 5.206 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 3.961 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the home-base desk characteristic upon adequacy of locker facilities, studying, sharing desk with others, and utilization of library.

SCHOOL BOARD ASSUMPTION XII, (STATEMENTS 15-18)

THAT HOME-BASE DESKS WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING HOME-BASE DESKS

Class	SA	A	U	D	SD	Total
Senior	211	240	92	56	77	676
Sophomore	225	228	84	40	47	624
Total	436	468	176	96	124	1300

$$\chi^2 = 8.974$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the home-base desk characteristic. The distribution of the responses showed that the students in the Sophomore class favored the home-base desk characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 5.206 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.390 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the home-base desk characteristic upon adequacy of locker facilities, studying, sharing desk with others, and utilization of library.

SCHOOL BOARD ASSUMPTION XIII, (STATEMENTS 19-21)

THAT THE LIBRARY WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE JUNIOR CLASS

TABLE XIV

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE
THEIR OPINIONS CONCERNING THE LIBRARY

Class	SA	A	U	D	SD	Total
Senior	140	175	56	98	38	507
Junior	135	151	50	77	16	429
Total	275	326	106	175	54	936
$\chi^2 = 7.225$ $P.05 = 9.49$ $df = 4$						

The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the library characteristic. The distribution of the responses showed that the students in the

Junior class favored the library characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 3.075 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.316 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization, location, and design of the library.

SCHOOL BOARD ASSUMPTION XIV, (STATEMENTS 19-21)

THAT THE LIBRARY WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE JUNIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XV

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE LIBRARY

Class	SA	A	U	D	SD	Total
Junior	135	151	50	77	16	429
Sophomore	161	161	57	65	24	468
Total	296	312	107	142	40	897

$$\chi^2 = 3.983$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the library characteristic. The distribution of the responses showed that the students in the Sophomore class favored the library characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 3.617 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 3.075 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization, location, and design of the library.

SCHOOL BOARD ASSUMPTION XV, (STATEMENTS 19-21)

THAT THE LIBRARY WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XVI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE LIBRARY

Class	SA	A	U	D	SD	Total
Senior	140	175	56	98	38	507
Sophomore	161	161	57	65	24	468
Total	301	336	113	163	63	975
$\chi^2 = 10.353$ $P.05 = 9.49$ $df = 4$						

The χ^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the library characteristic. The distribution of the responses showed that the students in the

Sophomore class favored the library characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 3.617 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.316 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization, location, and design of the library.

SCHOOL BOARD ASSUMPTION XVI, (STATEMENTS 22-25)

THAT THE CAFETERIA WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE JUNIOR CLASS

TABLE XVII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE CAFETERIA

Class	SA	A	U	D	SD	Total
Senior	110	182	173	96	115	676
Junior	106	184	114	111	57	572
Total	216	366	287	207	172	1248

$$\chi^2 = 23.959$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the cafeteria characteristic. The distribution of the responses showed that the students in the Junior class favored the cafeteria characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 2.066 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.383 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the cafeteria characteristic upon utilization, eating arrangement, and method of serving.

SCHOOL BOARD ASSUMPTION XVII, (STATEMENTS 22-25)

THAT THE CAFETERIA WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE JUNIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XVIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE CAFETERIA

Class	SA	A	U	D	SD	Total
Junior	106	184	114	111	57	572
Sophomore	141	202	115	108	58	624
Total	247	386	229	219	115	1196

$\chi^2 = 3.593$	$P.05 = 9.49$	$df = 4$
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The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the cafeteria characteristic. The distribution of the responses showed that the students in

the Sophomore class favored the cafeteria characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 2.066 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 1.726 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the cafeteria characteristic upon utilization, eating arrangement, and method of serving.

SCHOOL BOARD ASSUMPTION XVIII. (STATEMENTS 22-25)

THAT THE CAFETERIA WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XIX

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE CAFETERIA

Class	SA	A	U	D	SD	Total
Senior	110	182	173	96	115	676
Sophomore	141	202	115	108	58	624
Total	251	384	288	204	173	1300

$$\chi^2 = 34.005$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the cafeteria characteristic. The distribution of the responses showed that the students in the Sophomore class favored the cafeteria characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 2.066 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.383 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the cafeteria characteristic upon utilization, eating arrangement, and method of serving.

SCHOOL BOARD ASSUMPTION XIX, (STATEMENTS 26-27)

THAT THE SNACK BAR WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE JUNIOR CLASS

TABLE XX

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING THE SNACK BAR

Class	SA	A	U	D	SD	Total
Senior	85	131	54	53	15	338
Junior	82	119	39	36	10	286
Total	167	250	93	89	25	624
$X^2 = 2.856$ $P.05 = 9.49$ $df = 4$						

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the snack bar characteristic. The distribution of the responses showed that the students in

the Junior class favored the snack bar characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 4.369 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.176 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization and location of the snack bar.

SCHOOL BOARD ASSUMPTION XX, (STATEMENTS 26-27)

THAT THE SNACK BAR WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE JUNIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XXI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE SNACK BAR

Class	SA	A	U	D	SD	Total
Junior	82	119	39	36	10	286
Sophomore	94	123	52	32	11	312
Total	176	242	91	68	21	598

$$\chi^2 = 1.695$$

$$P.05 = 9.49$$

$$df = 4$$

The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the snack bar characteristic. The distribution of the responses showed that the students in the Sophomore class favored the snack bar characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 5.046 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 4.369 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization and location of the snack bar.

SCHOOL BOARD ASSUMPTION XXI, (STATEMENTS 26-27)

THAT THE SNACK BAR WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE SOPHOMORE CLASS

TABLE XXII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN
THEIR OPINIONS CONCERNING THE SNACK BAR

Class	SA	A	U	D	SD	Total
Senior	85	131	54	53	15	338
Sophomore	94	123	52	32	11	312
Total	179	254	106	85	26	650

$$X^2 = 5.510$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the snack bar characteristic. The distribution of the responses showed that the students in

the Sophomore class favored the snack bar characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 5.046 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 3.176 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the utilization and location of the snack bar.

SCHOOL BOARD ASSUMPTION XXII, (STATEMENTS 28-29)

THAT TEACHERS' OFFICES WILL BE MORE ACCEPTABLE TO STUDENTS
IN THE SENIOR CLASS THAN THOSE IN
THE JUNIOR CLASS

TABLE XXIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING TEACHERS' OFFICES

Class	SA	A	U	D	SD	Total
Senior	57	116	81	54	30	338
Junior	36	96	82	45	27	286
Total	93	212	163	99	57	624

$$\chi^2 = 3.556$$

$$P.05 = 9.49$$

$$df = 4$$

The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the teachers' office characteristic. The distribution of the responses showed that the students in the Senior class favored the teachers' office characteristic more than the Junior class. The students in the Senior class favored this characteristic by a ratio of 2.059 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 1.833 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effect of the teachers' office characteristic upon student conferences.

SCHOOL BOARD ASSUMPTION XXIII, (STATEMENTS 28-29)

THAT THE TEACHERS' OFFICES WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE JUNIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXIV

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING TEACHERS' OFFICES

Class	SA	A	U	D	SD	Total
Junior	36	96	83	45	27	286
Sophomore	49	110	84	53	16	312
Total	85	206	166	98	43	598

$$X^2 = 5.306$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the teachers' office characteristic. The distribution of the responses showed that the

students in the Sophomore class favored the teachers' office characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 2.304 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 1.833 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effect of the teachers' office characteristic upon student conferences.

SCHOOL BOARD ASSUMPTION XXIV, (STATEMENTS 28-29)

THAT THE TEACHERS' OFFICES WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXV

CHI SQUARE: DEGREE OF DIFFERENCES BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING TEACHERS' OFFICES

Class	SA	A	U	D	SD	Total
Senior	57	116	81	54	30	338
Sophomore	49	110	84	53	16	312
Total	106	226	165	107	46	650

$$\chi^2 = 3.050$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the teachers' office characteristic. The distribution of the responses showed that the students in the Sophomore class favored the teachers' office characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 2.304 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.059 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effect of the teachers' office characteristic upon student conferences.

SCHOOL BOARD ASSUMPTION XXV, (STATEMENTS 30-33)

THAT MODERN CLASSROOM EQUIPMENT WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE JUNIOR CLASS

TABLE XXVI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING MODERN CLASSROOM EQUIPMENT

Class	SA	A	U	D	SD	Total
Senior	112	228	123	148	65	676
Junior	94	213	102	121	42	572
Total	206	441	225	269	107	1248

$$X^2 = 3.047$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the modern classroom equipment characteristic. The distribution of the responses showed

that the students in the Junior class favored the modern classroom equipment characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 1.883 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.596 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the modern classroom equipment characteristic upon instruction and studying.

SCHOOL BOARD ASSUMPTION XXVI, (STATEMENTS 30-33)

THAT MODERN CLASSROOM EQUIPMENT WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE JUNIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXVII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING MODERN CLASSROOM EQUIPMENT

Class	SA	A	U	D	SD	Total
Junior	94	213	102	121	42	572
Sophomore	124	210	120	125	46	625
Total	218	423	222	246	88	1197

$$x^2 = 3.576$$

$$P.05 = 9.49$$

$$df = 4$$

The χ^2 treatment revealed no significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the modern classroom equipment characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 1.964 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 1.883 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the modern classroom equipment characteristic upon instruction and studying.

SCHOOL BOARD ASSUMPTION XXVII, (STATEMENTS 30-33)

THAT MODERN CLASSROOM EQUIPMENT WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXVIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING MODERN CLASSROOM EQUIPMENT

Class	SA	A	U	D	SD	Total
Senior	112	228	123	148	65	676
Sophomore	124	210	120	125	46	625
Total	236	438	243	273	111	1301

$$X^2 = 4.581$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed no significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was independent of the class membership and that the proportion of students responding in the five alternative categories did not differ between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the modern classroom equipment characteristic. The distribution of the response showed

that the students in the Sophomore class favored the modern classroom equipment characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 1.964 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.596 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the modern classroom equipment characteristic upon instruction and studying.

SCHOOL BOARD ASSUMPTION XXVIII, (STATEMENTS 34-39)

THAT CLOSED CIRCUIT TELEVISION WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE JUNIOR CLASS

TABLE XXIX

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING CLOSED CIRCUIT TELEVISION

Class	SA	A	U	D	SD	Total
Senior	136	303	193	210	172	1014
Junior	128	306	168	147	109	858
Total	264	609	361	357	281	1872

$$\chi^2 = 14.326$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the closed circuit television characteristic. The distribution of the responses showed that the students in the Junior class favored the closed circuit television characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 1.695 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.149 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the use of closed circuit television for resource enrichment programs, use of films over television, student participation in programs, viewing activities in other classrooms, and regular channel programs.

SCHOOL BOARD ASSUMPTION XXIX. (STATEMENTS 34-39)

THAT CLOSED CIRCUIT TELEVISION WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE JUNIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXX

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING CLOSED CIRCUIT TELEVISION

Class	SA	A	U	D	SD	Total
Junior	128	306	168	147	109	858
Sophomore	193	387	175	116	65	936
Total	321	693	343	263	174	1794

$\chi^2 = 34.222$	$P.05 = 9.49$	$df = 4$
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The χ^2 treatment revealed a significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of χ^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the closed circuit television characteristic. The distribution of the responses showed

that the students in the Sophomore class favored the closed circuit television characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 3.204 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 1.695 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the use of closed circuit television for resource enrichment programs, use of film over television, student participation in programs, viewing activities in other classrooms, and regular channel programs.

SCHOOL BOARD ASSUMPTION XXX. (STATEMENTS 34-39)

THAT CLOSED CIRCUIT TELEVISION WILL BE MORE ACCEPTABLE
TO STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXXI

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING CLOSED CIRCUIT TELEVISION

Class	SA	A	U	D	SD	Total
Senior	136	303	193	210	172	1014
Sophomore	193	387	175	116	65	936
Total	329	690	368	326	237	1950

$$X^2 = 93.419$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the closed circuit television characteristic. The distribution of the responses showed that the students in the Sophomore class favored the closed circuit television characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 3.204 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 1.159 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings relative to the use of closed circuit television for resource enrichment programs, use of film over television, student participation in programs, viewing activities in other classrooms, and regular channel programs.

SCHOOL BOARD ASSUMPTION XXXI, (STATEMENTS 40-55)

THAT THE BUILDING DESIGN WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE JUNIOR CLASS

TABLE XXXII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND JUNIOR CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING THE BUILDING DESIGN

Class	SA	A	U	D	SD	Total
Senior	584	951	568	374	226	3703
Junior	528	900	414	331	136	2309
Total	1112	1851	982	705	362	5112

$$X^2 = 24.942$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Junior classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the building design characteristic. The distribution of the responses showed that the

students in the Junior class favored the building design characteristic more than the Senior class. The students in the Junior class favored this characteristic by a ratio of 3.057 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.554 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the building design characteristic upon classroom discipline, student/teacher rapport, attitude toward school, building cleanliness, arrangement of classrooms, study, school pride, and utilization of counselor's office.

SCHOOL BOARD ASSUMPTION XXXII, (STATEMENTS 40-55)

THAT THE BUILDING DESIGN WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE JUNIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXXIII

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE JUNIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING THE BUILDING DESIGN

Class	SA	A	U	D	SD	Total
Junior	528	900	414	331	136	2309
Sophomore	654	1005	431	257	149	2496
Total	1182	1905	845	588	285	4805

$$\chi^2 = 22.217$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Junior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the building design characteristic. The distribution of the responses showed that the students in the Sophomore class favored the building design characteristic more than the Junior class. The students in the Sophomore class favored this characteristic by a ratio of 4.086 favorable to one unfavorable. The students in the Junior class were less favorable with a ratio of 3.057 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the building design characteristic upon classroom discipline, student/teacher rapport, attitude toward school, building cleanliness, arrangement of classrooms, study, school pride, and utilization of counselor's office.

SCHOOL BOARD ASSUMPTION XXXIII, (STATEMENTS 40-55)

THAT THE BUILDING DESIGN WILL BE MORE ACCEPTABLE TO
STUDENTS IN THE SENIOR CLASS THAN THOSE
IN THE SOPHOMORE CLASS

TABLE XXXIV

CHI SQUARE: DEGREE OF DIFFERENCE BETWEEN THE RESPONSES OF STUDENTS
IN THE SENIOR AND SOPHOMORE CLASSES RELATIVE IN THEIR
OPINIONS CONCERNING THE BUILDING DESIGN

Class	SA	A	U	D	SD	Total
Senior	584	951	568	374	226	2703
Sophomore	654	1005	431	257	149	2496
Total	1238	1956	999	631	375	5199

$$X^2 = 53.581$$

$$P.05 = 9.49$$

$$df = 4$$

The X^2 treatment revealed a significant difference between the opinion responses of the students in the Senior and Sophomore classes.

Since the size of X^2 reflects the magnitude of the discrepancy between the responses in each category the conclusion was that this characteristic was not independent of the class membership and that the proportion of students responding in the five alternative categories differed between the two classes.

The frequency distribution (after adjustment) indicated that the students in both classes responded in favor of the building design characteristic. The distribution of the responses showed that the

students in the Sophomore class favored the building design characteristic more than the Senior class. The students in the Sophomore class favored this characteristic by a ratio of 4.086 favorable to one unfavorable. The students in the Senior class were less favorable with a ratio of 2.554 to one. (Ratio computed by dividing combined "Strongly Agree" and "Agree" categories for favorable by combined "Strongly Disagree" and "Disagree" for unfavorable.)

The statements in this area attempted to elicit responses from students which expressed their feelings as to the effects of the building design characteristic upon classroom discipline, student/teacher rapport, attitude toward school, building cleanliness, arrangement of classrooms, study, school pride, and utilization of counselor's office.

TABLE XXXV
SUMMARY OF RESPONSE RATIOS

Characteristics	Senior	Junior	Sophomore	Average
I Glass Walls	1.595	1.707	1.584	1.628
II Unique Corridors	3.023	3.256	4.155	3.478
III Home-Base Desks	3.390	3.961	5.206	4.185
IV Library	2.316	3.075	3.617	3.002
V Cafeteria	1.383	1.726	2.066	1.725
VI Snack Bar	3.176	4.369	5.046	4.197
VII Teachers' Offices	2.059	1.833	2.304	2.065
VIII Modern Equipment	1.596	1.883	1.964	1.814
IX Closed Circuit T.V.	1.149	1.695	3.204	2.016
X Building Design	2.554	3.057	4.086	3.232
Total Characteristics	2.178	2.577	3.071	2.608

(Computed by dividing favorable responses by unfavorable responses)

TABLE XXXVI
TEN CHARACTERISTICS LISTED ACCORDING TO CLASS PREFERENCES

	Senior	Junior	Sophomore
1.	III	VI	III
2.	VI	III	VI
3.	II	II	II
4.	X	IV	X
5.	IV	X	IV
6.	VII	VIII	IX
7.	VIII	VII	VII
8.	I	V	V
9.	V	I	VIII
10.	IX	IX	I

Legend:

- I Glass Interior Wall
- II Unique Corridors
- III Home-Base Desk
- IV Library
- V Cafeteria
- VI Snack Bar
- VII Teachers' Offices
- VIII Modern Classroom Equipment
- IX Closed Circuit Television
- X Building Design

Observational Data

This part of the investigation was observational and comparative. Certain high school records were investigated which revealed some information as to changes in student behavior after moving into the new building. The reader may be interested in these findings in order to make comparisons of certain factual information although no attempt was made to treat it statistically.

It seems reasonable that if certain innovations in school building design and construction have contributed positively to the students' feelings of satisfaction then this should be reflected in behavioral changes in the students. Further it seems reasonable that these changes should appear in such behavioral aspects as (1) student average daily attendance, (2) frequency of discipline cases, (3) frequency of drop-outs, (4) use of library, (5) use of cafeteria, and (6) college attendance. This part of the study attempted to assess these aspects to see if there were any detectable behavioral changes in the students after occupancy of the new school.

TABLE XXXVII
PER PUPIL AVERAGE DAILY ATTENDANCE

Year	Membership	Average Per Student
1959-60	471 Pupils	174.78 Days
1960-61	472 Pupils	175.04 Days
1961-62	457 Pupils	175.16 Days
1962-63	511 Pupils	173.49 Days
1963-64	555 Pupils	174.98 Days
1964-65	548 Pupils	171.44 Days

TABLE XXXVIII
FREQUENCIES OF DISCIPLINE CASES

School Year	Boys	Girls	Total
1962-63	184	16	200
1963-64	139	16	155
1964-65	114	13	127

TABLE XXXIX
FREQUENCY OF DROP-OUTS

Year	Sophomores Enrolled	Dropped	Juniors Enrolled	Dropped	Seniors Enrolled	Dropped	Total Enrolled	Dropped
1959-60								
Girls	95	6	96	7	81	4	272	17
Boys	92	3	88	7	67	6	247	16
1960-61								
Girls	91	5	85	3	79	9	255	17
Boys	80	3	83	6	91	6	254	15
1961-62								
Girls	91	5	78	6	82	4	251	15
Boys	103	10	78	11	73	3	254	24
1962-63								
Girls	110	6	90	5	66	2	266	13
Boys	130	6	98	3	65	5	293	14
1963-64								
Girls	102	6	110	7	84	4	286	17
Boys	108	9	118	5	91	5	317	19
1964-65								
Girls	92	3	93	6	90	6	275	15
Boys	100	7	96	8	112	6	308	21

TABLE XL
FREQUENCY OF LIBRARY USAGE

School Year	Books Checked Out
1960-61	4106
1961-62	4847
1962-63	3729
1963-64	5623
1964-65	6182

TABLE XLI
PERCENT USING CAFETERIA

School Year	Percent Eating in Cafeteria
1960-61	52.6
1961-62	55.3
1962-63	48.2
1963-64	43.0
1964-65	41.0

TABLE XLII
PERCENT ATTENDING COLLEGE

Year	Graduating Seniors	% Attending College
1959-60	136	62
1960-61	155	54
1961-62	144	54
1962-63	120	62
1963-64	165	57
1964-65	184	62

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Purpose of the Study

The primary purpose of this study was to evaluate the extent to which a recently constructed high school plant that has incorporated certain new technological and design trends has actually influenced the students' feelings of satisfaction.

Although this investigation was descriptive in nature (and required the use of both observational and analytical techniques), it was seen by the investigator as but a first step in developing and applying one approach to evaluating the outcomes of new adventures in school plant planning and in school building design and use.

A review of the literature showed that the amount of money spent by schools for research and development of new and more appropriate ways of educating and housing school children has been negligible. There have been great changes in education, but mostly through broadening the programs, not from daring explorations in new and better ways to build school buildings.

The central purpose of this study was to investigate certain daring explorations in a new school plant and evaluate the effects upon the feelings of satisfaction of the students.

Furthermore, it has been the purpose of this study to develop a procedure for evaluating the outcomes of new adventures in school plant planning, design and use.

Methods and Procedures of the Study

Specifically, this study described (a) the community characteristics that tended to result in a new and unique school plant, (b) the major elements and processes that led to and resulted in the building plan and the completed structure, and (c) the utilization of the plant and the effects of its unique characteristics upon the students' feelings of satisfaction with respect to the educational assumptions upon which the plant was constructed. This examination was implemented by (1) collecting and examining the opinions of the students relative to the unique characteristics of the new plant, and (2) examining student attendance records, frequency of discipline cases, frequency of drop-outs, use of library, use of cafeteria, and number of students enrolling in college.

The investigator accomplished the following steps in the process of developing the dissertation problem, collecting and analyzing data, and writing the dissertation:

1. Examined community literature and school records as related to Blackwell and its public support of education. The first part of this study was an examination of the historical background of the community relative to the development of the school system. Attention was given to certain socio-economic conditions which influenced the development of a program of education and of a plan for a unique school.
2. Examined selected documentary evidence and other major elements and processes that led to the planning and development of the new school. The second part of this study was to describe the step by step development and construction of the new school. More specifically, consideration was given to certain major and crucial recommendations and

implementations that resulted from a survey made of the Blackwell School System in 1948 by a study committee for this purpose from the University of Oklahoma. This survey was included in this study because it so dramatically affected the educational pattern of the community. The findings and recommendations of this committee were accepted and adopted at that time by the Board of Education for immediate initial implementation. Subsequent membership to the Board of Education continued to perpetuate the original decisions. Documentary evidence supporting this part of the investigation was found in the files of the school administration office and the personal files of the superintendent of schools.

The final recommendation of this survey was that a new secondary school should be built as the climax to a fifteen year building program. Information as to the planning and developing of this school was found in sufficient quantities in the school files to document this part of the study.

3. Attention was given to the school board assumptions upon which the educational and architectural specifications were developed. Further attention was given the participation in the planning of the new school by various people such as architect, Board of Education members, staff members, students, and superintendent of schools. A critical examination was made of the procedures used in fitting all the parts together to conform to the available finances, and the design concept. Finally, an assessment was made of articles published in newspapers, magazines, and other publications.
4. An opinionnaire instrument which was relative to selected features of the new school was developed and administered to the total student population. This part of the study was an investigation of the opinions of those students then using the new school.
5. Information relative to changes in the behavioral aspects of the students was collected from the high school records as follows:
 - (a) Per Pupil Average Daily Attendance
 - (b) Frequency of Discipline Cases
 - (c) Frequency of Drop-outs
 - (d) Use of Library
 - (e) Use of Cafeteria
 - (f) Number of Students Enrolling in College

Summary of Findings

Total Characteristics of the New School. The greatest enthusiasm for the total unique features of the new school was manifested by the Sophomore class. The least affected were the Seniors. Although all three classes responded favorably to the total characteristics, the greatest significant difference was between the Senior and Sophomore classes. The least significant difference was between the Senior and Junior classes.

Characteristic of Classrooms with Glass Interior Walls. All three classes responded in favor of this characteristic and there were some differences between classes. There was no significant difference between the Senior and Junior classes. The difference between the Junior and Sophomore classes was significant as it also was between the Senior and Sophomore classes.

Characteristic of Unique Corridors. All three classes responded in favor of this characteristic and there were some differences between classes. There was no significant difference between the Senior and Junior classes. The difference between the Junior and Sophomore classes was significant as it also was between the Senior and Sophomore classes.

Characteristic of Home-Base Desks. All three classes responded in favor of this characteristic and there were some differences between classes. There was no significant difference between the Junior and Sophomore classes nor between the Senior and Sophomore classes. The only significant difference was found between the Senior and Junior classes.

Characteristic of Library. All three classes responded in favor of this characteristic although the differences between classes were relatively small. There was no significant difference between the Senior and Junior classes nor between the Junior and Sophomore classes. The only significant difference found was between the Senior and Sophomore classes.

Characteristic of Cafeteria. All three classes responded in favor of this characteristic with significant discrepancy between the responses of the Senior and Junior classes as well as between the Senior and Sophomore classes. There was no significant difference between the Junior and Sophomore classes.

Characteristic of Snack Bar. All three classes responded in favor of this characteristic although there were no significant differences found between any of the classes.

Characteristic of Teachers' Offices. All three classes responded in favor of this characteristic although there were no significant differences found between any of the classes.

Characteristic of Modern Classroom Equipment. All three classes responded in favor of this characteristic although there were no significant differences found between any of the classes.

Characteristic of Closed Circuit Television. All three classes responded in favor of this characteristic and significant differences were found between the three classes. The magnitude of discrepancy between responses was greatest between the Senior and Sophomore classes and the least between the Senior and Junior classes. Considerable difference was also found between the Junior and Sophomore classes.

Characteristic of Building Design. All three classes responded in favor of this characteristic and a significant difference was found between the three classes. The magnitude of discrepancy between responses was greatest between the Senior and Sophomore classes and least between the Junior and Sophomore classes. Considerable difference was found between the Senior and Sophomore classes.

Summary of Response Ratios. The Sophomores responded the most favorably to all ten characteristics examined in this study. The Juniors responded next favorably, except for the Teachers' Office Characteristic in which case they were least impressed. The Seniors were least favorable to all the characteristics, except the Teachers' Office Characteristic in which they were more affected than the Juniors.

The characteristic that was most acceptable by all students was the Snack Bar.

The characteristic that was next highest in acceptance by all students was the Home-Base Desks.

The characteristic that was third highest in acceptance by all students was the Unique Corridors.

The characteristic that was accepted in fourth place by all of the students was the Building Design.

The characteristic that was accepted in fifth place by all of the students was the Library.

The characteristic that was accepted in sixth place by all of the students was the Teachers' Offices.

The characteristic accepted in seventh place by all of the students was the Closed Circuit Television.

The characteristic accepted in eighth place by all students was the Modern Classroom Equipment.

The characteristic that was next to the last in acceptance by all students was the Cafeteria.

The characteristic that was accepted least favorably by all of the students was the Classrooms with Glass Interior Walls.

Observational Data: Per Pupil Average Daily Attendance. A review of the attendance records at the end of a three year period in the new building as compared to a prior three year period in the old building indicates a slight decline in average attendance. The per pupil average could be affected by a considerable increase in membership during this six year period. (See Table XXXVII)

Observational Data: Frequency of Discipline Cases. An attempt was made to investigate thoroughly the discipline frequencies in the Principal's Office but records were not available prior to the occupancy date. The records did show a progressive improvement over the three year period in the new building, however. (See Table XXXVIII)

Observational Data: Frequency of Drop-Outs. Records were available over the six year period comparing the number of drop-outs. Admittedly there are many variables that could affect changes in this part of the study. From the figures listed (See Table XXXIX) very little change was observable, however.

Observational Data: Library Usage. A comparison of the library books checked out in the two schools revealed that there was some drop in the number of books checked out during the first year in the new building but a steady increase in this rate developed over the three

year period in the new school and finally (See Table XL) exceeded the rate in the old building.

Observational Data: Percent Using Cafeteria. Another source of recorded information that was examined was that of cafeteria utilization. Records were available back to and including the 1960-61 school year. Consequently a comparison was made of the three year period in the new building with a prior two years in the old one. It should be stated that the method of serving meals in the new building was radically changed from that in the old building. In the old building a regular school lunch was served where a standard plate was served each student with no optional choices of food. This type lunch was served in a traditional style cafeteria. Provisions were made in the new building for a cafeteria selection of foods, and served in disposable type dishes instead of plastic plates. Students returned to the home-base desks to eat their lunch. A percentage comparison shows a decline in the number using the new cafeteria. (See Table XLI)

This decline might be partly due to the fact that a private quick lunch type business opened across the street from the new school the same year the new school opened.

Observational Data: Percent College Attendance. Records were also available showing the percent of students requesting transcripts for college admissions. The three year period in the new building as compared to the same period of time in the old one showed an average increase from 56.7% to 60.3%. Again it must be admitted that there were many uncontrolled conditions which could have affected this trend. (See Table XLII)

Conclusions

This study was undertaken as an attempt to provide some insights for educators and school architects in developing new school plants.

At the outset it must be concluded that it is difficult, if not impossible, to identify and describe the exact characteristics of a community that are conducive to the acceptance of new trends and innovations in new school construction. All that can be done is to examine some of the more salient factors in the historical and socio-economic background of a community which are considered to be relevant to the development of a unique school plant that was acceptable to the students.

It must also be concluded that a considerable amount of well structured planning, involving a number proficient people, had to be done before there was community acceptance and support for such a school plant.

As a part of this study, consideration was given the utilization of the school plant and the effects of its unique characteristics upon the students' feelings of satisfaction with respect to the educational assumptions made by the Board of Education in planning the school. The following conclusions may be made as a result of this investigation:

1. That the opinions of the Sophomores reflected the greatest acceptance of the unique characteristics of the new school plant; the Juniors next and the Seniors least.
2. That these unique characteristics were most acceptable to students experiencing them for the first time.
3. That students' opinions tended to be less favorable over a period of time as students matured and became more familiar with these unique features.
4. That the Board of Education was correct in assuming that these

unique features would be favorably accepted by the students in each class.

5. That there was greater utilization of certain facilities within the school plant because of the unique design characteristics.
6. That although there were little or no significant differences between classes relative to some building characteristics, all classes favored each characteristic.
7. That some characteristics were more acceptable than others to the students.
8. That students favored new trends and innovations in a new school plant.
9. That to a certain extent anything new is favorably accepted.
10. That classes differed as to the extent of their acceptance of some characteristics. Certain specific characteristics were more impressive to some classes than others.

It is safe to conclude that the basic questions of acceptance and utilization investigated by this study were answered in the affirmative with some variations.

The effects of these unique characteristics on certain selected behavioral aspects of the students were not statistically tested, only reported. It can be concluded that although the analysis showed positive acceptance of all the unique building characteristics, the level of acceptance had little, if any effect upon the selected behavioral aspects of the students.

Implications of the Study

The study has attempted to determine the nature and extent of the effectiveness of certain unique trends and innovations in school plant design upon the students' feelings of satisfaction. Concomitantly, this study constituted an evaluation of certain exploratory adventures

in school plant planning which should provide insights for educators and school architects in developing new school buildings. Granted this study was limited in scope, but studies of this nature are greatly needed if school buildings are to be built that will positively affect the feelings of the students.

Inferences which may be drawn from the results of this study indicate that students are favorably impressed by certain unique design characteristics and innovations in a school plant and that such school plants can be effective educational tools. The implication is quite strong that a school building properly designed can save many man-hours of teacher supervision and control and thus contribute to the opportunity for students to develop individual responsibilities because of such an environment.

There is also some basis for inferring that a curriculum can be greatly limited or expanded by the educational environment created by the school plant design. For this reason it might be implied that better curriculum planning can result from better school building planning. It is reasonable to imply that for a school plant to be most functional it must be designed to meet the changing needs and requirements of modern educational methods and practices. This demands some creativity and imagination on the part of the educator and school architect.

It appears feasible to assume that there is a need for comparative studies to be made by educators and school architects to investigate the effects of similar unique design characteristics in other new school plants.

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APPENDIX A

APPENDIX A
OPINIONNAIRE

February, 1965

The purpose of this Opinionnaire is to help determine the relationship between the effectiveness of instruction, attitude toward instruction, attitude toward study and the attitude toward school in general in the New Blackwell High School Building as compared to the Old Blackwell High School Building.

Instructions

There are no right or wrong answers to the statements that follow. Please express your own individual feelings about these statements. Read each statement and decide how you feel about it. Think in terms of the general situation rather than specific ones. There is no time limit, but work as rapidly as you can. PLEASE CHECK EVERY ITEM.

Directions

If you strongly agree, CIRCLE ----- SA

If you agree, CIRCLE ----- A

If you are undecided or uncertain, CIRCLE ----- U

If you disagree, CIRCLE ----- D

If you strongly disagree, CIRCLE ----- SD

Example:

"I think it is important that all students complete a high school education." (SA) A U D SD. The circle around (SA) means that there is strong agreement with this statement.

Please Check

SENIOR	_____	_____	I was a student in a high
JUNIOR	_____		school in another city before
SOPHOMORE	_____		enrolling in the new Blackwell
FACULTY	_____		High School.

- | | | | | | |
|---|----|---|---|---|----|
| 1. Studying seems to be easier for students in classrooms having glass interior walls. | SA | A | U | D | SD |
| 2. Classrooms having glass interior walls allow for too many distractions. | SA | A | U | D | SD |
| 3. Students seem to be self conscious in classrooms having glass interior walls. | SA | A | U | D | SD |
| 4. Students seem to like working in classrooms having glass interior walls because the rooms seem more spacious. | SA | A | U | D | SD |
| 5. I think students like to attend classes in rooms having glass interior walls because they can see who is walking down the halls. | SA | A | U | D | SD |
| 6. I think most teachers can maintain good class attention in classrooms having glass interior walls. | SA | A | U | D | SD |
| 7. I believe that classrooms having glass interior walls and solid exterior walls give a shut-in feeling to students. | SA | A | U | D | SD |
| 8. Halls without lockers seem less congested. | SA | A | U | D | SD |
| 9. I think students feel self conscious walking down halls having glass interior walls because others can see them. | SA | A | U | D | SD |
| 10. I believe that students are more relaxed in halls having botanical gardens. | SA | A | U | D | SD |
| 11. I don't think students hurry so much in halls enclosed with glass interior walls and having botanical gardens. | SA | A | U | D | SD |
| 12. Students require more supervision in halls enclosed with glass interior walls and having botanical gardens. | SA | A | U | D | SD |

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|-----|---|----|---|---|---|----|
| 13. | I think students talk more loudly in halls enclosed with glass interior walls and having botanical gardens. | SA | A | U | D | SD |
| 14. | Students seem to enjoy the freedom of movement between classes without direct teacher supervision in this school. | SA | A | U | D | SD |
| 15. | Students seem to study more effectively in a Study Center having their own home-base desks than in a Study Hall. | SA | A | U | D | SD |
| 16. | I think students prefer regular hall lockers rather than lockers in home-base desks. | SA | A | U | D | SD |
| 17. | I believe students enjoy sharing their home-base desks with other students. | SA | A | U | D | SD |
| 18. | I believe that students would prefer having their home-base desk in another area of the building. | SA | A | U | D | SD |
| 19. | It seems to me that students like the library being located in the center of the study area. | SA | A | U | D | SD |
| 20. | It seems to me that students use the library more since it is located near thier home-base desks. | SA | A | U | D | SD |
| 21. | It seems that having the library located near their home-base desks makes no difference to students. | SA | A | U | D | SD |
| 22. | I think students like to eat at their own home-base desks. | SA | A | U | D | SD |
| 23. | It seems to me that students dislike the use of disposable dishes. | SA | A | U | D | SD |
| 24. | I believe that students would rather eat in a regular cafeteria separated from the Study Center. | SA | A | U | D | SD |
| 25. | It is noisier in the Study Center than it is in a regular cafeteria during the noon hour. | SA | A | U | D | SD |
| 26. | I think students would prefer having the Snack Bar located indoors instead of outdoors. | SA | A | U | D | SD |
| 27. | A Snack Bar seems to help break the monotony of the day for students. | SA | A | U | D | SD |

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|-----|--|----|---|---|---|----|
| 28. | It is easier for students to get special help from teachers who have individual offices. | SA | A | U | D | SD |
| 29. | Teachers seem to be able to plan classroom assignments better since they have individual offices in which to work. | SA | A | U | D | SD |
| 30. | Some classrooms do not have enough teaching equipment. | SA | A | U | D | SD |
| 31. | I believe teachers could use more classroom teaching equipment. | SA | A | U | D | SD |
| 32. | The use of classroom equipment seems to make learning easier for students. | SA | A | U | D | SD |
| 33. | I think that students can learn as well from good teachers regardless of classroom equipment used. | SA | A | U | D | SD |
| 34. | I think that closed circuit television provides some important learning opportunities for students. | SA | A | U | D | SD |
| 35. | I think that most films shown on closed circuit television have been informative and educational. | SA | A | U | D | SD |
| 36. | I think the students like live closed circuit television programs better than films. | SA | A | U | D | SD |
| 37. | I think that students like to see what other classrooms are doing over closed circuit television. | SA | A | U | D | SD |
| 38. | I think most students like to participate in closed circuit television programs. | SA | A | U | D | SD |
| 39. | I think that additional cameras would make TV programs more interesting. | SA | A | U | D | SD |
| 40. | It seems to me that teachers have to be more strict in this building than in the old one. | SA | A | U | D | SD |
| 41. | It seems to me that the students feel they know their teachers better in this building. | SA | A | U | D | SD |
| 42. | I think that most students like school better in this building. | SA | A | U | D | SD |
| 43. | The custodians keep this building cleaner than they did the old one. | SA | A | U | D | SD |

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|-----|--|----|---|---|---|----|
| 44. | I think that the departmental arrangement of classes makes learning easier for students. | SA | A | U | D | SD |
| 45. | The design of this building helps keep students from becoming so bored in school. | SA | A | U | D | SD |
| 46. | Teachers seem to work together more in this building than they did in the old one. | SA | A | U | D | SD |
| 47. | Teachers have to control discipline less in this building than they did in the old one. | SA | A | U | D | SD |
| 48. | Students seem to be more comfortable in this building than they were in the old one. | SA | A | U | D | SD |
| 49. | Students seem to study better in air-conditioned building. | SA | A | U | D | SD |
| 50. | I think most students' grades are improving since moving into this building. | SA | A | U | D | SD |
| 51. | I think most students dislike having people visit their school. | SA | A | U | D | SD |
| 52. | I think most students like the location of the Counselor's Office in this building. | SA | A | U | D | SD |
| 53. | I think most students understand the policies and organization of this school. | SA | A | U | D | SD |
| 54. | Students seem to feel more independent in their work in this building. | SA | A | U | D | SD |
| 55. | I think students prefer going to school in a more conventional style building. | SA | A | U | D | SD |

APPENDIX B

APPENDIX B

ASSESSMENTS OF THE NEW SCHOOL'S UNIQUENESS

For the past several years the Blackwell School District has been willing to accept daring and challenging new design concepts in the construction of new school buildings. As a result some of these buildings have received national recognition and attention. In an article written by Mrs. Lois Fessenden, Blackwell, Oklahoma, appearing in the Christian Science Monitor on June 29, 1963, Mrs. Fessenden said:

Blackwell, a town of less than 10,000 persons, has an avid interest in the school system and its activities. All bond issues submitted by the Board of Education have been overwhelmingly approved in special elections. This reflects the confidence the townspeople have in their local school teachers and administrators. Since 1950, Blackwell has been building new schools and has recently completed a high school unique in both program and building design. A few years ago, referring to Blackwell's elementary school program, an article published in COLLIER'S MAGAZINE, was entitled, "THE LITTLE RED SCHOOLHOUSE GOES MODERN." Today, if this article were written about Blackwell's recently completed high school, the title would have to read, "THE LITTLE RED SCHOOLHOUSE GOES ULTRA-MODERN." This ultra-modern concept in high school education was dedicated in January, 1963. But the dedicatory speeches were not given in a huge auditorium. Blackwell High School does not have one. The live program, originated in the underground "Little Theatre" was carried over closed circuit television to 20 receiver units placed in regular classrooms.⁷²

Harold Silverthorn described the relationship of the school and community very succinctly in saying:

Blackwell, Oklahoma, High School is a unique and wonderful school building. The excellence of this structure, however, cannot be understood, appreciated, or evaluated out of relationship to the community in which it is located. This building exemplifies for all to see the attitudes of a community toward its children. It says for all to hear: We want our children to have fine schools: We want their

⁷²Lois Fessenden, "Form Follows Function in Blackwell High School," Christian Science Monitor, Saturday, June 29, 1963.

teachers to have proper facilities to educate our children; we want all to know that we are proud of what we are doing here, and this building is evidence of this pride. In many respects Blackwell is an ideal community--the kind of place in which we would like to live. A place where people are friendly, empathetic, and concerned about the welfare of their children and youth. Residents of the community of Blackwell are fortunate, indeed. It is small in size. Fewer than 10,000 people live there. Family income is not large, but business men and parents consistently vote 97% support for school bond issues.⁷³

In 1962, Educational Facilities Laboratories, New York, New York, selected the Blackwell Senior High School as being one of eleven "Significant High Schools for 1962." This was a national selection based on unique features and designs incorporated into new school plants. EFL had this to say about the new Blackwell School:

A high school now in the process of final design, the Blackwell Senior High School in Blackwell, Oklahoma, will be one of the first schools in the United States to make independent study of all kinds the central feature of its design.

The school, when it opens, will have a conventional organization but will be offering some large and small group instruction and will be moving towards a team staff. Its more striking innovation, however, will be its individual study center where students will be spending a majority of their time.

Blackwell is planned for 600 students, and each student will have his own home base or study facility in the individual study center. The center will contain the library-resource center and a unique circular teacher consultation and dining area. Otherwise, the space is completely open--filled only with the 600 home bases. The home base, which will be especially designed for this school, is essentially a four-man desk with drawers serving as lockers.

Blackwell is able to devote this much space to individual study because the center and its home bases serve several purposes simultaneously. The center replaces the conventional study hall and also serves as the cafeteria. The students bring their food in from a nearby kitchen and use their home base desks as dining tables. The study center can also be

⁷³Harold Silverthorn, past president of the National Council on Schoolhouse Construction, in a letter to Caudill, Rowlett, and Scott Architects. October 16, 1964.

used as an assembly hall if all 600 students need to gather together at one time. (A smaller little theater is situated beneath the study center and is used for dramatic work and large group lectures. It also serves as a tornado shelter.)

Along with its emphasis on individual study, Blackwell begins to suggest some of the radical ways that schools are beginning to revise the conventional approach to organizing school space. In this school the space has been rearranged to suit one of the newer purposes of education. But there are other ways to design space and other purposes that can be served by doing so.⁷⁴

At the 1965 American Association School Administrators Convention in Atlantic City this school was selected by the Jury of Architects for exhibit. There were approximately 300 schools selected from across the nation. From the total exhibit, thirty-one schools received special citations, Blackwell High School being one. According to Shirley Cooper, Director of Inservice Education for the American Association of School Administrators, the Blackwell High School was selected for entry in the 1965 School Building Architectural Exhibit and would carry a special citation as was awarded by the Exhibit Jury. The comments from this award read as follows:

Screening jury comments ... BLACKWELL HIGH SCHOOL ... A high degree of unity achieved through the strategic location, design, and character of the library and commons area. The life and movement of the student body and the teaching process clearly reflected in the arrangement and use of space. Excellent interior treatment. Provisions for expansion an integral part of the plan. AASA 1965 Architectural Exhibit Jury.⁷⁵

The Blackwell Senior High School was selected as School of the Month by the Nation's Schools, in May 1965. A special award presented the Blackwell Board of Education in recognition of this new school reads as follows:

⁷⁴ Educational Facilities Laboratories, A Profile of Significant Schools, 1962.

⁷⁵ AASA School Building Architectural Exhibit, February, 1965.

For the excellence of architectural design, functional planning, satisfactory environment, economy of construction and operation, and proper provision for the educational needs of the community. Selection made by the Nation's Schools Committee representing the National Council on Schoolhouse Construction.⁷⁶

The May issue of the Nation's Schools Magazine carried a description of the unique individual study center feature of the school.

A four-in-one, half acre individual study center encircles a round, sunken, glass-enclosed "super-library." This center is home base for the 600 students at Blackwell Senior High School, Blackwell, Oklahoma. Although the facility is huge, it operates with minimum supervision and is the key to the administration's plan for the school.

Essentially the individual study center (ISC) is a roof over a half-acre of space that functions effectively as a combination study hall, auditorium, lunchroom (when the patio is not used), and locker room. Within the area have been placed 150 large desks with drawer-size locker. Each table is shared by four students, two at a time.

At the center of the ISC is the circular, instructional materials research-type library. Its open book stacks are arranged in wagon wheel spoke fashion, with a round check-out desk at the hub, a built-in bench all around the outer wall, and wall-to-wall carpeting. It has soundproof booths with speed reading machines, tape recorders, and phonographs. Down a circular stair, directly below the main floor, is the storage and workroom of the library.

Students are free to work in any sector of the ISC-library area following roll check and a few minutes for organization. They spend up to 40 percent of the school day in this space without policing. A supervisor is on hand to give requested assistance. The librarian, and the teachers using the workroom-departmental offices in the three adjacent classroom wings, also can observe the students.⁷⁷

Harold Silverthorn in his letter to Caudill, Rowlett, and Scott

Architects made this further evaluation:

Martin Mayer, comprehensive critic of American schools, has made the statement that schools waste their time in attempting

⁷⁶"The Nation's School of the Month," Nation's Schools, Vol. 75, No. 5, May, 1965, p. 51-53.

⁷⁷Personal letter to Caudill, Rowlett, Scott Architects.

to teach values to children. Many of us have accepted his statement as a truism. Blackwell High School, however, is a contradiction of this Mayer statement. It is an example of positive, working proof that schools can change and improve the value pattern of children and youth. But the educational leadership must assume this responsibility and have the ability to design a program for this purpose in a climate conducive to this type of learning experience. The school program emphasized freedom--behavior and self-control ...

Students, teachers, and community were asked what kind of spirit should be brought into the school. The students help design the kind of environment they wanted in the building. It was built to solve their own problems. Problems that are not unique to Blackwell High School but the same world over. One cannot comprehend the spirit of this school from the building blueprints or from the magazine articles written about it. A skeptic looks at the plans and photographs and on the basis of his experience thinking how can this tremendously large room function effectively in a high school as a home base, study hall, lunchroom, locker room, and auditorium. But it does!

He visualizes horse play among the students, hawkeyes for the study hall, teacher on duty, and students wasting their time. But this does not happen. The room really functions according to its concept, believe it or not.

The building is concrete evidence of how a way of life, a pattern of behavior, is translated into a mode of living and into a structure to house it. For example, the way the basic idea of the large center originated is psychologically sound. The synthesis and natural integrative characteristics of knowledge have been proven conclusively biologically and genetically for those who wish to be receptive to ideas. "Home base" was not conceived in an atmosphere of provincialism either, for dozens of high schools throughout the United States were visited before conclusive, basic guide lines for planning the building were established.

Contrary to the popular concept of how the creative architect functions mentally, the plan of a building does not blossom forth in one grand surge of conception, but must be perceived as a placing together of many parts and pieces by many persons into a composite whole through the eyes of a perceptive coordinator.

The "home base" area is not the only feature of the building. Here one can see many ideas working well that educators are talking about but never bring to fruition because they do not have the initiative and drive to provide desirable new and different learning opportunities for children and youth.

Blackwell High School has had closed circuit TV in their buildings for three years. It works without technical personnel.

It is simple, low cost installation that every high school can afford. It is operated by the students. It is a learning experience for the operators. It is an effective, usable communications and learning device. It works!

The "cafeteria-kitchen" is a simple serving line with a minimum of kitchen equipment. For an average of thirty-six cents, it serves an excellent meal at a break-even price seldom seen in a school cafeteria for the amount and quality of food served.

Teachers' offices are uniquely but appropriately planned. Each of the three complexes of buildings has combined teachers' offices that function as a private office, yet has a departmental grouping.

The setting of the building is in an educational park where eventually all community education and recreational facilities will be grouped together for the use of all age groups. As the plants grow and the grounds are developed, it will become a horticultural show place.

Corridor gardens are another unique feature of the building. To reduce the cost of air conditioning the buildings and minimize heat loss, the engineers found it would be much less expensive to have the glass-walled classroom face on a common corridor garden area in the center of a building. This feature has become one of the delightful visual effects in the building.

The architects have emphasized many aspects of visual beauty throughout the building. Most of the principles prescribed by research regarding visual environment have been incorporated in the classrooms. Brightness balance principles that require subdued glare sources, few dark spots, and a high level of lighting intensities, have been respected. Colors throughout the buildings are pleasing and sometimes dramatic.

The most dramatic and exciting part of the building is the library located in the huge "home base" room. It is a show case for books. It is a circular area five feet below the "home base" grade level so that one looks into the library over the stacks from outside. The floor and part of the wall are carpeted in red from wall to wall. The exciting visual effect must be seen to be appreciated.

The environment of this building contributes to the educational program to the extent that it exemplifies beauty, harmony, and man's architectural achievement. It helps to develop in youth a respect for, and an appreciation of, both aesthetic and social values. As we seek in the home to create a place and a way of life which leads our children to respect the cultural and spiritual goals of our society, so Blackwell has

in a school building to provide a place and a way of life which strengthens those efforts of the parents.

A skeptic probably thinks all this is very good if a community can afford it. However, this is not the case. The building is relatively inexpensive. Construction cost of the buildings, including most of the fixed equipment and air conditioning, is at least two or three dollars less a square foot than the cost of comparable completed school buildings in the northern tier of states.

Perhaps we can sum it up by saying: Here is a pleasing economical structure designed to help the teacher bring the benefits of an education to the youth of Blackwell, Oklahoma.⁷⁸

In May, 1963, the State School Board selected the new Blackwell Senior High School as School of the Month for its publication. Selected comments regarding the planning aspects of the school follow:

The new Blackwell Senior High School was not intended to be just another school building. It was not a matter of original concern that just more space be built to contain a given number of people. Some three years ago the School Board determined the final and definite need for a new high school and adopted a building schedule. The first year was to be spent in planning, the second year in financing and designing, and the third year in building.

The interesting and significant year was the first one. The board wanted an economical school, not in terms of how little money would be necessary, but in terms of the wisest investment of dollars to buy the most education for the money. It was also determined that every means possible should be employed in doing research and study on what was going on in education across the nation.

All during this research period the architect was present. In fact, at the very beginning of this planning period, the Board of Education hired Caudill, Rowlett & Scott, architect-engineers, as consultants to travel the many diverse roads in order that communications would not be a problem later. There was nothing ever discussed in these early stages about design concept or architecture. The whole philosophy was to develop the curriculum first, then put a frame around it.⁷⁹

⁷⁸Personal letter to Caudill, Rowlett, Scott Architects.

⁷⁹State School Board Journal, May, 1963.

In September of 1963, the Tulsa Tribune sent a feature writer, Richard White, to visit the new Blackwell High School. Excerpts selected from his story follow:

"Cool School: Blackwell Study Center Helps
Students Progress at Low Cost"

On the south edge of Blackwell in north central Oklahoma, 600 young men and women attend classes in a high school building which is attracting national attention.

There is nothing about the low clean exterior lines of the building to make it different, but when a visitor walks through the front door, the unorthodox arrangement is immediately evident.

The front door opens into a large, quiet room full of busy students. Inside the entrance is a fish-bowl library--circular, sunken and completely enclosed in glass. This school was designed for the individual student with a home base for each one.

The functional arrangement of the school is not its only progressive feature. It is air-conditioned, it has closed circuit television to every classroom and its own TV production facilities, its quiet hallways are sky-lighted, and under each skylight is a botanical garden, and with all this, the cost was only \$585,347--\$13.49 per square foot.

Blackwell was able to build the study center, with its special furniture, because it serves several purposes. It takes the place of the conventional study hall, locker area, cafeteria, and assembly hall. The students eat lunch at their desks or in a patio area which opens off the center.

The school is a combination of the glass and windowless approaches. Classrooms are all glass on the hallways, but have only small windows at floor level on the outside. By contrast, the study center is glassed all around.

The air conditioning has more than paid off. Besides the comfort and quiet it offers, it attracted a large group to summer school.

Blackwell's library has book stacks radiating like spokes from a central desk. Around the outside is a seat along the wall for browsing students. The library is carpeted, and has sound booths for tapes and records. It can accommodate 80 students.

Under the school is a small auditorium which seats 200. A large auditorium will be built later as a separate building. Television programs originate in the basement auditorium,

and students run the simple equipment. The school has assembly programs by TV. The basement also serves as a tornado shelter.⁸⁰

The Daily Oklahoma featured the Blackwell High School in its Orbit section on Sunday, January 6, 1963:

The atmosphere for study is neither drab nor disregarded in Blackwell's new million dollar high school. Decor and furnishings are a blend of lively and soothing colors.

Individual study is the keynote in the award-winning design of this "library-centered" building. The library is a circular cage of glass, carpeted with tomato red acoustical material and located at the juncture of three wings containing 19 classrooms, laboratories and offices. It's the center of learning.

Immediately outside the library's glass walls is an area for individual study where each student has a "home base" desk with combination lock-drawer. There are no wall lockers with banging metal doors. There is a kitchen, but no waste-space cafeteria dining room.

In the basement, which doubles as a storm shelter, is a Little Theater with two stages. Other features include a closed circuit television system with TV in every room; well equipped science lab-classrooms for biology, chemistry and physics; a student council meeting room; a counseling office; and classrooms specifically designed and equipped for languages, art, home economics, typing, bookkeeping and mathematics. Teachers have home bases, too--individual office cubicles.

One thing the building doesn't have--distracting outside windows in classrooms. As functional as it is striking and colorful, the new high school sits on a 32-acre campus.⁸¹

⁸⁰Richard White, "Cool School: Blackwell Study Center Helps Students Progress at Low Cost," Tulsa Tribune, September 30, 1963.

⁸¹"Chromatic Schoolhouse," Orbit, Sunday Oklahoman, January 6, 1963.

VITA

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