Student Work

1-1-1982

A Projected Enrollment Study of the Papillion-LaVista Public School District

Harland D. Cook
University of Nebraska at Omaha

A PROJECTED ENROLLMENT STUDY

OF THE

PAPILLION-LAVISTA PUBLIC SCHOOL DISTRICT

Presented to the

Graduate Faculty

University of Nebraska

at Omaha

In Partial Fulfillment

of the Requirement for the Degree

Specialist in Education

University of Nebraska at Omaha

by

Harlan D. Cook

January 1982

UMI Number: EP74156

UMI®

Dissertation Publishing

UMI EP74156

ProQuest®

FIELD PROJECT ACCEPTANCE

Accepted for the Graduate Faculty, University of Nebraska, in partial fulfillment of the requirements for the degree Specialist in Education, University of Nebraska at Omaha.

Supervisory Committee

Name   Department

Edward Stadler   _Teacher Education_

Thomas Pettil   _Educ. Adm._

Darrell Kellams
Chairman

_3 - 17 - 1982_
Date

TABLE OF CONTENTS

INTRODUCTION

The Papillion-LaVista Public School District had an enrollment of less than 400 students in 1957. Over 25,000 people now live in its twenty-four square mile area and send approximately 6,000 children to its seven elementary schools, two junior high schools and one senior high school.

The evidence stated above points to a rapidly growing school district. Two of the existing elementary buildings, G. Stanley Hall and Carriage Hill had large additions added to them in time for the beginning of school in 1975. A new elementary school was completed and occupied in February of 1976, in the Golden Hills area. The LaVista Junior High School building was completed in time for classes to begin in the fall of 1976. A new warehouse was completed near the LaVista Junior High School, and a swimming pool was constructed at the Senior High School in 1977. Funds for these projects were provided by the November 6, 1973, bond issue and a special two and one-fourth million dollar grant from the federal government.

With thirteen new subdivisions being developed by builders in the Papillion-LaVista Public School District, the Board of Education recognizes the need for additional facilities to meet the projected growth of students throughout the school district.

This study will provide valuable information for the Board of Education in reference to the projected enrollment of the Papillion-LaVista Public School District.

Statement of the Problem

The opening of new subdivisions and the building of new homes has caused an increased enrollment in the Papillion-LaVista Public School District. As a result of this program and construction, planning for the future is becoming exceedingly difficult.

Purpose of the Study

The purpose of this study was to determine the projected enrollment for the Papillion-LaVista Public School District through the year 1984.

Limitation of the Study

The study was limited to the boundaries of the Papillion-LaVista Public School District.

Definition of Terms

Subdivision. This term refers to the division of land making it ready for sale and construction.

Site. This term refers to land that has been selected or purchased for the purpose of constructing a school.

Extended School Term. This implies to an extension of the present school term.

School Attendance Area. An attendance area is that portion of a school district in which pupils are required to attend a particular school as designated by local school boards.

Survival Ratio Technique. A macro forecasting model that is utilized for predicting student flows by grade level or age category.

Significance of the Study

Specifically, the study will help the Board of Education and Central Administration decide whether or not:

(1) Sites should be purchased and schools constructed in new subdivisions.

(2) Additions should be added to the present buildings.

(3) Temporary buildings should be purchased and placed on present school sites.

(4) An extended school term should be added to make better use of the present facilities.

(5) Rezoning of school attendance areas should be considered.

Procedures

The following procedures were used in carrying out this study:

(1) A review of relevant literature was undertaken.

(2) Personal interviews with Realty Companies was
conducted considering such factors as: the
number of people per square mile the area will
support; zoning regulations; lot-size and
square-feet requirements per dwelling; number
of lots being plotted in a particular area;
and, the availability of financing.

(3) To obtain local views about population determi-
nants, personal interviews with other school
district administrators and planning agencies
was carried out.

(4) A macro forecasting model and data required for
predicting student flows by grade level or age
category, utilizing the Survival Ratio Technique,
was used. First, the live births for at least
the immediate past ten years are needed to
determine the rate of student flow into grade
one. The first grade enrollment is divided
by the number of live births in the county
(school district) six years prior to enrollment
in order to determine the rate of flow. Second,
except for the first year projections, the
survival ratio per grade per year is determined
for a given grade level by dividing the successor
years' net enrollment for that level by the

previous years' enrollment. Finally, the mean
survival ratio is determined per grade to serve
as a multiplier in forecasting student popula-
tion trends. Because of factors related to
population change, allowance is made to intuit
a range incorporating highs and lows that is
affected by variables influencing population
trends associated with school and community
growth.

Organization of the Study

Chapter I presents an overview of the enrollment of
the Papillion-LaVista Public School District from 1957
to the present. It includes the statement of the problem,
the purpose of the study, limitation of the study, defi-
nition of terms, significance of the study and the pro-
cedures to be used.

Chapter II is a review of related literature in
reference to projected enrollments at the national, state,
and local levels.

Chapter III displays results and analysis of data
gathered by use of the personal interview and the Survival
Ratio Technique.

Chapter IV contains a summary of the study including
conclusions and recommendations from data analysis.

Chapter II

REVIEW OF RELATED LITERATURE

The birth rate in the United States has apparently stabilized at a level far below expectations. Emerging concepts of marriage and family, coupled with changing roles for women and the variety of birth control options now available, have served to reduce dramatically the number of live births per thousand of population. After several decades of sharply increasing enrollments, school systems are experiencing a decreasing enrollment pattern.[1]

Total fall enrollment increased from 51.3 million in 1963 to 60.3 million in 1976 and is expected to decrease to 58.1 million in 1986. These totals include daytime enrollment in all regular public and nonpublic elementary and secondary schools; degree-credit enrollment in publicly and privately controlled institutions of high education in programs leading to a bachelor's or higher degree; and non-degree-credit enrollment in programs that extend not more than 3 years beyond high school and are designed to prepare students for technical, semiprofessional, or

---

[1]Walter G. Hack, School Business Administration: A Planning Approach (Boston, Massachusetts, 1978), p. 6.

craftsman-clerical positions.[2]

Projections of enrollments in regular public elementary and secondary schools are being computed by using a grade-retention method. This method depends mainly on assumptions about the entrance of six-year-olds into the first grade and their subsequent progress through elementary and secondary school as determined by projected grade-retention rates.[3]

The advantage of this method is that projections are based primarily on students already enrolled, especially for the beginning of the projection period. For projections one year into the future, 11 of the 12 grades are based on actual enrollments one year earlier; for projections two years into the future, 10 of the 12 grades are based on actual enrollments two years earlier, and so on. The projections not based on actual past enrollments are based on projections of the six-year-old population. Six-year-olds entering the first grade through fall 1982 were already born when the latest populations were made (1977); thus, their number is not dependent on

---

[2]Martin M. Frankel, "Projections Of Education Statistics to 1986-87", National Center for Education Statistics, 1978, p. 7.

[3]Ibid., p. 7.

assumed fertility rates. By 1986, only projections of
enrollments in kindergarten through grade four depend on
assumed fertility rates.[4]

This method has been used since 1966 with great
success. The average discrepancy between actual enroll-
ments and projections one year out has been 0.2 percent
with a maximum of 0.6 percent. The average and maximum
for two years out are 0.4 and 0.7, respectively, and for
five years out the figures are 1.1 percent and 1.9 per-
cent. Projections for ten years out made in 1966 and
1967 have been too high by an average of just 3.4 percent.

Enrollment in grades k-8 of public and nonpublic
schools increased from 26.7 million in 1954 to 36.8 million
in 1969, an increase of more than 10 million students in
15 years. However, the sharp decreases in the number of
births in the 1960's began to be reflected in k-8 enroll-
ments in the early 1970's. By 1976, enrollments had
already dropped to 33.6 million, a decrease of 3.2 million
students in seven years. One result of this decrease has
been the closing of many elementary schools throughout
the Nation during the past few years. Undoubtedly, some
of the closed schools were built to accommodate the ten

---

[4]Ibid., p. 8.

million additional students who enrolled in elementary schools during the 1950's and 1960's.

Continuing decreases in enrollment are expected through 1983 to be followed by gradual increases. By 1983 the expected decrease of 2.4 million students will bring the enrollment level in grades k-8 down to 31.2 million, about the same level as in 1959. By 1986 the enrollment in grades k-8 should be back to over 32.0 million.

The projections of enrollments in grades k-8 discussed above are based on the assumption that the series II population projections will remain through 1986 substantially as now projected by the Bureau of the Census.

The series II population projection is based on an ultimate completed cohort fertility rate of 2.1 births per woman, which represents replacement level. Replacement-level fertility is that required for a population to replace itself indefinitely, given projected mortality rates and in the absence of net migration. The 2.1 births per woman is also compatible with the most recent birth expectation data.[5]

---

[5]U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 308, "Population Characteristics, Fertility of American Women: June 1976" (Washington, D.C., U.S. Government Printing Office, 1977)

The high alternative k-8 enrollment projection is
based on the series I population projection. The high
k-8 enrollment projection shows decreases from 33.6 million
in 1976 to a low of 31.4 million in 1981, followed by
increasing enrollments reaching 34.9 million in 1986. This
represents a projection for 1986 of 2.9 million students
more than the series II projection of 32.0 million. How-
ever, the series I population projection is based on the
assumption of an ultimate completed fertility rate of
2.7 births per woman. In light of the most recent birth
and expected birth data, it is unlikely that the birth
levels required to meet series I population projections
will be approached.

A more likely alternative is the low alternative k-8
enrollment projection, which is based on the series III
population projection. The low alternative projection
shows the enrollment decline in elementary schools con-
tinuing to decrease from 33.6 million in 1976 to 29.9
million in 1985 before increasing to 30.0 million in 1986.
Although the series I ultimate completed fertility assump-
tion of 1.7 births per woman most closely agrees with
the birth data for the past few years, the most recent
birth data indicates that the level will be closer to
that projected in series II, which is based on a 2.1
ultimate completed fertility rate.

Enrollment in grades 9-12 in public and nonpublic schools, which increased from 7.2 million in 1954 to 15.7 million in 1976, is expected to decrease steadily to 13.2 million in 1986 as the children born in the low birth years of the late 1960's progress through high school. There are no alternative 9-12 enrollment projections since students enrolled in grades 9-12 through 1986 were already born when these latest population projections were made.[6]

The projections indicate that high schools in the Nation will have to face the same problems of declining enrollments in the 1980's that the elementary schools are facing in the 1970's.

In New York State, projections of public school enrollment are based on the application of a modified version of the cohort survival model. Retention ratios from grade to grade were analyzed for a period of six prior years and the trend extended over the nineteen year period from 1974-75 to 1992-93. Actual birth figures, population estimates, and projected New York State public school age-grade matrices were used to estimate future first grade enrollments. These first grade estimates together with retention ratios for each grade made possible pro-

---

[6]Ibid., p. 20.

jections for all grades beginning with actual enrollment figures for the base year, 1973-74.[7]

The cohort survival model requires three basic inputs:

1. Actual enrollment by grade for the most recent year available.

2. Grade to grade retention ratios for grades k through 12.

3. Projected entering cohorts (first grades) for each of the years to be projected.

When the above inputs have been determined, the following calculations are performed to complete the projection:

1. The projected entering cohorts are inserted into their proper grade cells within the projection period.

2. The base year grade by grade enrollments are entered in their proper cells.

3. Enrollment in each grade in the base year is multiplied by its corresponding retention ratio to obtain enrollment in the next higher grade for the first projected year. The grades projected from the base year's grades plus the projected entering first grade cohort completes the projection for grades k-12 for the first year.

4. The first projected year is then used as the base year to determine enrollment for the second projected year.

---

[7]Projections of Public and Non Public School Enrollment and High School Graduates in New York State: 1974-75 to 1992-93. New York State Education Dept., Albany. Information Center on Education. 1974 p. 20.

5. The process continues in an iterative fashion until the projection for grades k-12 is completed for the number of years desired.

6. Enrollment in special classes for handicapped children is projected by applying a fixed multiplier to the projected enrollment in grades k-12. This multiplier is determined from the trend of ungraded enrollment as a proportion of total enrollment for several years. The decision as to what proportion will be used in the projection model is somewhat judgmental.

Success of the model is dependent on the accuracy of the basic input data. Base year enrollment is a known quantity, and retention ratios show little variation from year to year. Therefore, the key to an accurate projection is precise determination of the entering first grade cohorts over the projection period. The following describes the procedures for projecting entering cohorts for 1974-75 through 1992-93 for the current enrollment projection.

The United States Bureau of the Census published a public school age-grade matrix in 1960 and 1970. From these matrices, the proportions of the population in selected age groups enrolled in individual grades in public schools were determined. Inspection of the New York State and United States age-grade matrices showed that the proportions for most age groups in the State matrix, while lower than those in the United States, were moving toward the national figures. Therefore, the

following assumptions were made:

1. In New York State, the proportion of children ages 7-18 attending public schools will increase until in 1995, it reaches the corresponding 1970 nationwide value.

2. In New York State, the proportion of children ages 4-6 and 19-21 attending public school will remain the same as the 1970 value, as these proportions were already above the national figure.[8]

Since advanced knowledge of student population is needed for educational planning, some factors that generally affect student enrollments are presented in this section. Planners must realize that forecasting human trends accurately takes place under a high degree of uncertainty. Good judgment and a test of the assumptions of the forecasts will greatly improve this area of educational planning. It is not enough for the educator to know the area of educational planning. It is not enough to know his community, he must also be aware of variables in the state, the region, and the nation that will influence the school system's growth. The perspectives of the school administrator and the educational planner must be extended beyond the political boundaries of the school district.

School district reorganization, continuous urbani-

---

[8]Ibid., p. 20.

zation, increasing numbers of kindergarten students, and
the desegregation of school systems enter into the enroll-
ment projection problem. ⋅The educational planner must be
aware of these variables contributing to student enrollment
changes, because he is frequently called upon to identify
population trends in specific school attendance areas.[9]

One of the most needed planning skills, predicting
population changes, is risky but essential for successful
educational progress. Forecasting student population
trends is frequently accompanied by considerable error
which usually grows larger with time. During the past
twenty years such variables as mobility of families and
decline in birth rates have increased the risk in fore-
casting, and have posed unwieldly problems in determining
school facility needs. Even when the population trend
is known, the ability to project accurately population
trends for the individual schools is frequently obscured.[10]

Where are we going from here? That guessing game is
better conducted by the National Center for Educational
Statistics, which has just released its predictions for
1986-1987. Some of the highlights: School age popula-

---

[9]Ibid., p. 21.

[10]Ibid., p. 21.

tion will decline, 7% at the elementary age level, 18% at high school. Elementary and secondary enrollments will drop to just over 45 million, while college enrollments will climb to almost 13 million. Instructional staff will continue to increase slightly, though high school staff will decline as much as 13% (with increased elementary staffing more than making up for this decline).[11]

What does it all mean? There's an old saying about "lies and statistics." These are just the statistics. Use them as you wish to put your best foot forward.[12]

---

[11]American School and University, Education Grows Up: Fifty Years In Statistics, November-December 1978, p. 30.

[12]Ibid., p. 30.

Chapter III

DISPLAY OF DATA

Our society will undergo many demographic changes
in the years ahead. A basic shift in the population age
mix - fewer children, more adults, and greater numbers
of senior citizens is in full swing with inexorable force.

The demand for education and society's ability to
meet that demand are greatly influenced by our present
and future demographic trends. An understanding of demo-
graphic science and trend awareness is basic to sound
educational policy planning. The need to bring technical
demographic analysis, and the sounder basis for judgment
it provides, closer to the policy planning process is of
urgent importance.

School enrollment projections for the years ahead
describe a change of dramatic impact and deep significance.
Low birth and mortality rates, coupled with a fertility
rate that has slipped steadily downward since 1957, have
been yielding a population which will have a larger pro-
portion of elderly people and a smaller proportion of the
young.

All available data collected in this study indicates
clearly that Papillion/LaVista Public School's enrollment

is not following the national trend, but will experience
an increase in population in grades kindergarten through
twelfth at least through 1984.

Barring unforeseen events which cause variance in
projection ratios, six year forecasts of membership can
be made with reasonable accuracy. This is because nearly
all the children who will comprise the school membership
six years from now have already been born.

Projections in this study are presented in Tables
II through IV on pages 24 to 26, as demonstrated by use
of the Survival Ratio Technique and in Tables V through
XI on pages 27 to 33, as demonstrated by use of two En-
vironmental Variable Factors.

Minimal required data for forecasting student popula-
tion is presented in Table II. The enrollment data are
enrollments reported at the beginning of each respective
school year. Row one in Table II presents the live births
in the school district six years prior to base year en-
rollment, and rows three through fourteen (grades 1 through
12) present student enrollments over a six-year period
(1973-1978). To determine the first grade's survival
ratio of 1.7407 for 1974, the enrollment of 376 was divid-
ed by the 216 live births in the school district in 1968
(six years prior to grade one). The survival ratio of
0.8860 for the second grade in 1974 was calculated by

dividing the enrollment of 342 by 286. In 1977 the sur-
vival ratio of the second grade was determined by dividing
472 by 446. Since the objective is to achieve a basis
for predicting future enrollments, each survival ratio
per year per grade is tabulated to establish a mean sur-
vival ratio per grade level. The mean SR per grade level
is shown in the last column in Table II.

Forecasted enrollments based on data presented in
Table II are shown in Table III. The prediction of 488
students for grade one in 1979 was determined by multiply-
ing the mean survival ratio 2.1138 times 231 (the live
births six years prior to the year of enrollment). The
second year projection for 1979 of 427 was determined by
taking the product of 0.9827 and 435 (the actual 1978
first grade net enrollment).

The six-year enrollment projections with a 10 per
cent variance are illustrated in Table IV. Because of
factors related to population change the planner is allowed
to intuit the range that is affected by variables influenc-
ing population trends associated with school and community
growth. Frequent updating of estimates is always advisable
to diminish error.

Regarding inaccuracy of the SRT, the NESDEC Council
found that the greatest errors produced were in growing
communities, where accurate enrollment forecasts were

needed most. Even when a forecast is technically accurate,
in larger school systems the SRT may be inaccurate by
several hundred or several thousand students.

In analyzing enrollment changes, historical data
are often used, including pupil survival rates. Although
board members and administrators should be alert to the
Survival Ratio Technique used in this study they should
also be alert to changes in the community that have not
yet manifested themselves in the historical data, such as
shifts in neighborhood character, planned construction,
the financial status and enrollments of private schools
in the area, and sharp rises or falls in the pre-school
population.

Personal interviews with building inspectors from
the cities of LaVista and Papillion provided invaluable
information concerning: the number of people per square
mile the area will support; zoning regulations; lot size
and square-feet requirements per dwelling; and, the num-
ber of lots being plotted in a particular area.

In addition, the administration was very helpful in
providing information concerning last year's enrollment.

Two environmental variable factors utilized in pro-
jecting enrollments in seven elementary school attendance
areas have been used in Tables V through XI; one indicat-
ing the number of housing units involved, and the other

the pupil population effect per unit.

By the year 1984, the Carriage Hill Elementary School attendance area will have a student population of 814 students, assuming that 0.7394 projected students per home is maintained.

Eighty-seven per cent of the students from the Golden Hills Elementary School attendance area are military affiliated. However, the school presently has a ratio of 1.032 students per home and should this continue will have a student population of 948 students by the year 1984.

A significant factor relating to data from the G. Stanley Hall Elementary School attendance area is demonstrated by the 0.5425 projected students per home. The cost of a home in this area is much less than the cost of a home in the Carriage Hills or Golden Hills attendance areas. Many times it is assumed that a less expensive home may house younger children of elementary school age, however, this does not hold true comparing these areas.

Enrollment will increase to 618 students by 1984 in the Parkview Heights Elementary School attendance area, assuming a ratio of 0.8028 students per home is maintained.

The projected enrollment is much less than one would anticipate in the Trumble Park Elementary School attendance area. A significant factor involved here is the number

of older families and homes being occupied in this area.
The same assumption can be made concerning the Tara Heights
Elementary School attendance area. Several homes are
occupied by families with older children or retired
people, so therefore, the projected students per home is
0.4449.

LaVista West Elementary School will increase the
least because of its limited boundaries and total number
of homes projected to be available by 1984 for occupancy.

Probably the most significant factor demonstrated by
all the data made available from the seven elementary
school attendance areas as illustrated in Tables V through
XI is the ratio of students per home from each area. The
ratio is not consistent from one attendance area to another
as shown by the 0.7394 in the Carriage Hill Elementary
School area as compared to the 0.3942 in the Trumble Park
Elementary School area.

TABLE I   PAPILLION-LAVISTA PUBLIC SCHOOLS

RESIDENT LIVE BIRTHS

1968 - 1978

Year	Births
1978	243
1977	260
1976	251
1975	245
1974	227
1973	231
1972	205
1971	172
1970	231
1969	223
1968	216

Division of Health Data
and Statistical Research
Nebraska State Health Department

TABLE II

PAPILLION-LAVISTA PUBLIC SCHOOLS

MINIMAL DATA REQUIRED FOR SRT

LIVE BIRTHS		216		223		231		172		205		MEAN
YEAR	1973	1974	SR	1975	SR	1976	SR	1977	SR	1978	SR	SR
GRADE												
1	386	376	1.7407	422	1.8923	446	1.9307	496	2.8837	435	2.1219	2.1138
2	381	342	0.8860	354	0.9414	451	1.0687	472	1.0582	476	0.9596	0.9827
3	383	365	0.9580	361	1.0555	407	1.1497	467	1.0354	499	1.0572	1.0511
4	446	385	1.0052	367	1.0054	363	1.0055	432	1.0614	461	0.9871	1.0129
5	439	456	1.0224	405	1.0519	412	1.1226	395	1.0881	434	1.0046	1.0579
6	421	434	0.9886	467	1.0241	442	1.0913	414	1.0048	403	1.0202	1.0258
7	451	433	1.0285	449	1.0345	501	1.0728	459	1.0384	436	1.0531	1.0454
8	374	474	1.0509	431	0.9953	452	1.0066	503	1.0039	475	1.0348	1.0183
9	391	379	1.0133	468	0.9873	460	1.0672	462	1.0221	498	0.9900	1.0159
10	343	397	1.0153	387	1.0211	457	0.9764	425	0.9239	463	1.0021	0.9877
11	334	322	0.9387	383	0.9647	370	0.9560	442	0.9671	406	0.9552	0.9563
12	264	314	0.9401	292	0.9068	362	0.9451	356	0.9621	400	0.9049	0.9318

Live Births = For the six years prior to base year enrollment.

1973 = Data are required to calculate the 1974 Survival Ratios.

TABLE III   PAPILLION-LAVISTA PUBLIC SCHOOLS

SIX-YEAR ENROLLMENT PROJECTED BY THE SRT MODEL (1979-1984)

LIVE BIRTHS			231	227	245	251	260	243
YEAR		1978	1979	1980	1981	1982	1983	1984
GRADE	MEAN SR							
1	2.1138	435	488	480	518	531	550	514
2	0.9827	476	427	480	472	509	522	540
3	1.0511	499	500	449	505	496	535	549
4	1.0129	461	505	506	455	512	502	542
5	1.0579	434	488	534	535	481	542	531
6	1.0258	403	445	501	548	549	493	556
7	1.0454	436	421	465	524	573	574	515
8	1.0183	475	444	429	474	534	583	585
9	1.0159	498	483	451	436	482	542	592
10	0.9877	463	492	477	445	431	476	535
11	0.9563	406	443	470	456	426	412	455
12	0.9318	400	378	413	438	425	397	384
TOTAL		5386	5514	5655	5806	5949	6128	6298

LIVE BIRTHS = For the year six years prior to base year.

YEAR (1978) = Actual Enrollment.

YEAR (1979-1984) = Projected Enrollment.

TABLE IV

PAPILLION-LAVISTA PUBLIC SCHOOLS

SIX-YEAR ENROLLMENT PROJECTIONS WITH 10 PERCENT VARIANCE

GRADE	Min.	1979	Max.	Min.	1980	Max.	Min.	1981	Max.	Min.	1982	Max.	Min.	1983	Max.	Min.	1984	Max.
1	439	488	537	432	480	528	466	518	570	478	531	584	495	550	605	463	514	565
2	384	427	470	432	480	528	425	472	519	458	509	560	470	522	574	486	540	594
3	450	500	550	404	449	494	454	505	556	446	496	546	481	535	589	494	549	604
4	454	505	556	455	506	557	409	455	501	461	512	563	452	502	552	488	542	596
5	439	488	537	481	534	587	481	535	589	433	481	529	488	542	596	478	531	584
6	400	445	490	451	501	551	493	548	603	494	549	604	444	493	542	500	556	612
7	379	421	463	418	465	512	472	524	576	516	573	630	517	574	631	463	515	567
8	400	444	488	386	429	472	427	474	521	481	534	587	525	583	641	526	585	644
9	435	483	531	406	451	496	392	436	480	434	482	530	488	542	596	533	592	651
10	443	492	541	429	477	525	399	445	490	388	431	474	428	476	524	481	535	589
11	399	443	487	423	470	517	410	456	502	383	426	469	371	412	453	409	455	501
12	340	378	416	372	413	454	394	438	482	382	425	468	357	397	437	346	384	422

TABLE V

PAPILLION-LAVISTA PUBLIC SCHOOLS

CARRIAGE HILL ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. Williams Addition	19	19	19	19	19	19	19	19
2. McDonalds Addition	18	18	18	18	18	18	18	18
3. Green Acres	186	186	186	186	186	186	186	186
4. Vista Valley	42	42	42	42	42	42	42	42
5. Highland Park	32	32	32	32	32	32	32	32
6. Carriage Hill	154	154	154	154	154	154	154	154
7. Park Hills I	132	132	132	132	132	132	132	132
8. Park Hills II	106	106	106	106	106	106	106	106
9. Gold Coast	8	8	8	8	8	8	8	8
10. Park Hills III & IV	335	4	30	50	70	100	130	160
11. Highland Estates	90	50	50	50	60	60	70	70
12. Trailside	40	15	15	20	20	25	25	30
13. Monarch Place	144	13	60	80	100	120	140	144
TOTAL NUMBER LOTS	1306	779	852	897	947	1002	1062	1101
PROJECTED STUDENTS 0.7394 PER HOME		576	630	663	700	741	785	814

TABLE VI

PAPILLION-LAVISTA PUBLIC SCHOOLS

GOLDEN HILLS ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. Quail Creek	348	60	90	120	150	210	270	348
2. Falcon Forest	44	15	30	44	44	44	44	44
3. Granada II	92	24	67	92	92	92	92	92
4. Town & Country Estates	360						30	60
5. Bella West	100	100	100	100	100	100	100	100
6. Golden Hills	146	146	146	146	146	146	146	146
7. Capehart Housing	125	125	125	125	125	125	125	125
TOTAL NUMBER LOTS	1215	460	558	627	657	717	807	919
PROJECTED STUDENTS 1.032 PER HOME		475	576	647	678	740	833	948

TABLE VII

PAPILLION-LAVISTA PUBLIC SCHOOLS

G. STANLEY HALL ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

		Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1.	Becker Addition	334	334	334	334	334	334	334	334
2.	LaVista Addition	439	439	439	439	439	439	439	439
3.	Crestview Addition	53	46	53	53	53	53	53	53
4.	Briarwood I	62	62	62	62	62	62	62	62
5.	Crestview Apt.								
	TOTAL NUMBER LOTS	888	881	888	888	888	888	888	888
	PROJECTED STUDENTS 0.5425 PER HOME		477	481	481	481	481	481	481

TABLE VIII

PAPILLION-LAVISTA PUBLIC SCHOOLS

PARKVIEW HEIGHTS ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. Parkview Heights I	414	414	414	414	414	414	414	414
2. Harvest Hills	151	75	100	120	140	151	151	151
3. Parkview Heights IV	115	3	23	53	83	115	115	115
4. Tara Hills	160	0	0	10	30	50	70	90
TOTAL NUMBER LOTS	840	492	537	597	667	730	750	770
PROJECTED STUDENTS 0.8028 PER HOME		395	431	479	535	586	602	618

TABLE IX

PAPILLION-LAVISTA PUBLIC SCHOOLS

TRUMBLE PARK ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. South Papillion	348	348	348	348	348	348	348	348
2. South Crest Addition	33	33	33	33	33	33	33	33
3. Country Side Addition	45	45	45	45	45	45	45	45
4. Oliver Addition	65	65	65	65	65	65	65	65
5. Crown Point Addition	8	8	8	8	8	8	8	8
6. Overland Hills I	150	150	150	150	150	150	150	150
7. Leawood South	87	1	20	40	60	87	87	87
8. South Hampton	288	7	30	50	70	100	130	160
9. Oak Hills	114	0	10	30	60	90	100	114
10. Overland Hills II	91	0	10	30	50	70	91	91
11. Overland Hills III	400	0	0	20	40	70	100	130
12. Glenwood Hills	208	0	0	0	0	20	40	60
TOTAL NUMBER LOTS	1837	657	719	821	931	1088	1199	1293
PROJECTED STUDENTS 0.3942 PER HOME		259	283	324	367	429	473	509

TABLE X

PAPILLION-LAVISTA PUBLIC SCHOOLS

TARA HEIGHTS ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. Beadlis Addition	194	194	194	194	194	194	194	194
2. Gayer Addition	31	31	31	31	31	31	31	31
3. Beckers Addition	18	18	18	18	18	18	18	18
4. Beckers Addition II	26	26	26	26	26	26	26	26
5. Hogan Addition	8	8	8	8	8	8	8	8
6. Hogan Addition II	13	13	13	13	13	13	13	13
7. Svagera Addition	14	14	14	14	14	14	14	14
8. Tara Heights	419	400	410	419	419	419	419	419
9. Briarwood I	242	180	190	200	200	200	200	200
10. Hickory Hills	520	0	0	0	30	90	120	150
TOTAL NUMBER LOTS	1473	872	892	911	941	1001	1031	1061
PROJECTED STUDENTS 0.4449 PER HOME		388	397	405	419	445	459	472

TABLE XI

PAPILLION-LAVISTA PUBLIC SCHOOLS

LAVISTA WEST ELEMENTARY SCHOOL AREA

ESTIMATED HOUSE COMPLETIONS IN GIVEN YEAR

	Plotted Lots	1978	1979	1980	1981	1982	1983	1984
1. LaVista Addition	502	502	502	502	502	502	502	502
2. Briarwood II	125	5	25	45	65	85	105	125
3. Crestview Addition	68	30	40	50	60	68	68	68
TOTAL NUMBER LOTS	695	537	567	597	627	655	675	695
PROJECTED STUDENTS 0.6703 PER HOME		360	380	400	420	439	452	466

Chapter IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Forecasting is the strategic base from which all
planning originates. The purposes of attempting to fore-
cast population have to do largely with efforts to under-
stand the relationship between the number of people on
a given area and the change in all economic, political,
and social endeavor. The values of method and the results
in population prediction are therefore relative and are
dependent upon the purpose for which they are to be used.

SUMMARY

The importance of this study was to determine the
projected enrollment for the Papillion/LaVista Public
School District through the year 1984. The opening of
new subdivisions and the building of new homes had creat-
ed an increased enrollment in the Papillion/LaVista Public
School District. As a result of this program and con-
struction, planning for the future had become exceedingly
difficult.

In this study, two models were used to demonstrate
an enrollment projection through 1984 for the Papillion/

LaVista Public School District. The Survival Ratio Technique (SRT) is a macro forecasting model that was utilized for predicting student flows by grade level or age category.

Personal interviews with building inspectors from the cities of LaVista and Papillion provided invaluable information.

Two environmental variable factors were utilized in projecting enrollments in seven elementary school attendance areas; one indicating the number of housing units involved, and the other the pupil population effect per unit.

The study indicated clearly that Papillion/LaVista Public School's enrollment did not follow the national trend, but experienced an increase in population in grades kindergarten through twelfth at least through 1984.

CONCLUSIONS

1. Golden Hills Elementary School had the largest projected enrollment by the year 1984 with 948 students.

2. G. Stanley Hall Elementary School had the smallest increase in projected students by the year 1984. They increased 3 students in population in a six year period of time.

3. Parkview Heights Elementary School and Trumble Park Elementary School doubled in student population by the year 1984.

4. LaVista West Elementary School had the smallest student population by the year 1984 with an enrollment of 466 students.

5. Grade nine had the largest student enrollment of 592 by the year 1984.

6. Grade twelve had the smallest student enrollment of 384 by the year 1984.

7. Grade six had the largest increase in student enrollment during the six year period from 1978 - 1984 with a total of 153 students.

8. Total enrollment for grades one through twelve by the year 1984 was 6,298 students compared to the 1978 figure of 5,386 students.

RECOMMENDATIONS

The Board of Education and Central Administration should purchase sites and construct 16 room schools in the following new subdivisions:

(1) Monarch Place located in the Carriage Hill Elementary School attendance area.

(2) Quail Creek located in the Golden Hills Elemen-

tary School attendance area.

Eight room additions should be added to the following elementary schools:

(1) Parkview Heights Elementary School
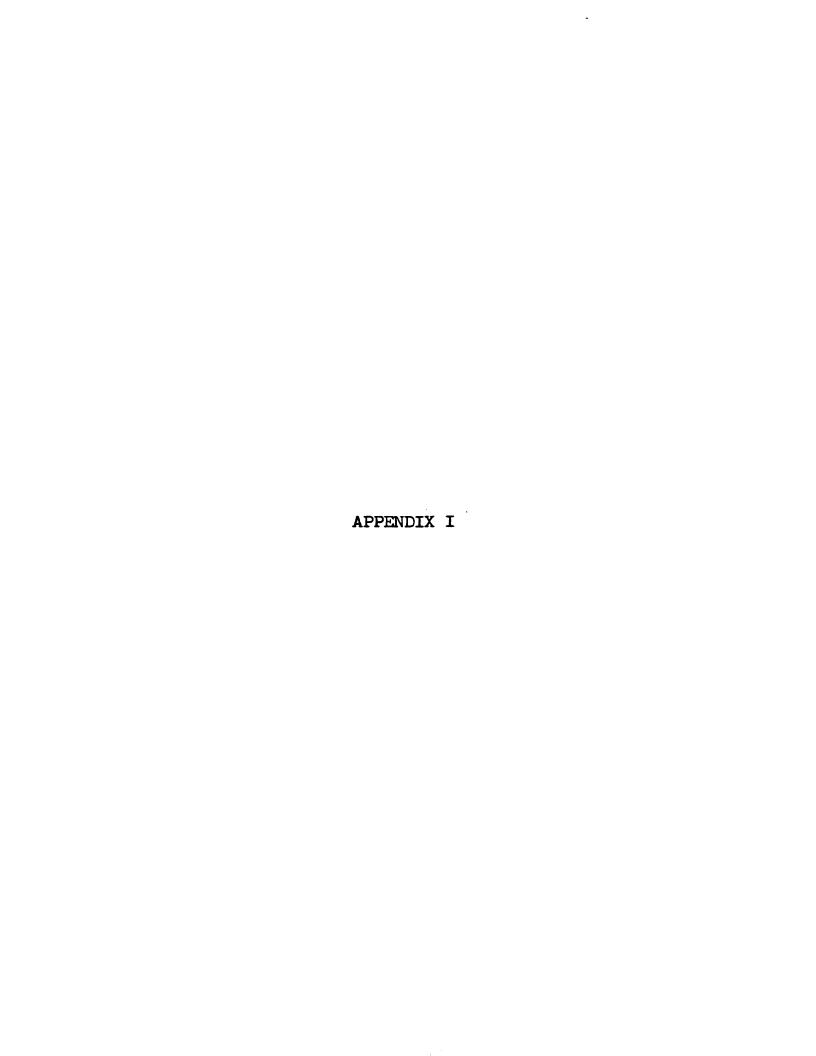
(2) Trumble Park Elementary School

The above recommendations give appropriate classroom space to house all kindergarten through sixth grade students through the year 1984.

Present space was adequate for grades seven, eight, and nine in both Papillion Junior High School and LaVista Junior High School through 1984.

Papillion Senior High School had adequate space for students in grades ten, eleven, and twelve through 1984.

BIBLIOGRAPHY

"A Smoothing Solution to the School District Enrollment Projection Problem," <u>Educational Planning</u>, May, 1975.

Abramson, Paul,"Education Grows Up: 50 Years in Statistics," American School and University, November-December, 1978.

Eisenberger, Katherine E., <u>A Profound Transformation</u>, American Association of School Administrators, Arlington, Virginia, 1977.

Frankel, Martin M., "Projections Of Education Statistics to 1986-87," National Center For Education Statistics, 1978, p. 7-8.

Frankel, Martin M., "NCES Projects K-12 Enrollment Upturn, to Begin in 1984," Phi Delta Kappan, May, 1977.

Hack, Walter, G., School Business Administration: A Planning Approach, Boston, Massachusetts, 1978, p. 6.

Nielsen, Robert A., <u>Managing Public School Dollars</u>, American Institute of Certified Public Accountants, New York, New York, 1972.

"Projections of Public and Non Public School Enrollment and High School Graduates in New York State: 1974-75 to 1992-93. New York State Education Dept., Albany, New York, Information Center on Education. 1974, p. 20-21.

"School Enrollment in the United States," <u>The World Book Encyclopedia</u>, 1978.

Tanner, Kenneth C., <u>Designs For Educational Planning</u>, Lexington, Massachusetts: D.C. Heath and Company, 1971.

U.S. Department of Commerce, Bureau of the Census, <u>Current Population Reports</u>, Series P-20, No. 308, "Population Characteristics, Fertility of American Women: June, 1976," Washington, D.C., U.S. Government Printing Office, 1977.

APPENDIX I

PAPILLION/LAVISTA PUBLIC SCHOOLS

Questionaire

For

A Field Project

On

A Projected Enrollment Study

Name _____

Address _____

Phone _____

Date _____

(1) Number of people per square mile the area will support.

(2) Zoning regulations.

(3) Lot-size and square-feet requirements per dwelling.

(4) Number of lots being plotted in a particular area.

(5) Availability of Financing.

APPENDIX II

Local educator speaks to planners

Harlan Cook, a resident of LaVista and principal at Golden Hills Elementary School near Papillion, gave a slide presentation and talk entitled "Profound Transformation" at a recent meeting of the LaVista Planning Commission.

The presentation, which is made available to area school districts through OSACS, is designed to assist in developing awareness and understanding of the demographic trends affecting society in general and school enrollment and curriculum in particular, Cook said. Information contained in the presentation was gathered by Katherine E. Eisenberger, national director of the AASA Demographic Awareness Project. Ms. Eisenberger is a nationally recognized authority on enrollment decline.

The presentation basically amounts to looking into the future in relation to the shift of population age mix, which shows fewer children, more adults, and an even greater number of senior citizens throughout the nation. Cook pointed out that the Papillion School District (along with nearby Millard) is one of the few areas where "we are still holding our own or increasing in student population." The projected student enrollment is predicted to drop in the near future, he added, with the projected number of students per home in the Parkview Heights attendance area pegged at .8028 students, at LaVista West, .6703 students, and at G. Stanley Hall, .5425 students per home.

Cook said that throughout the nation, within 12 years if present trends continue, one out of every five Americans (or 20 percent) will be at least 55 years of age or older. "By 1990, for the first time in the history of this country, the number of persons over age 55 will be larger than the school age group," the educator stated.

Cook noted that he would be happy to make the presentation in front of any community groups, etc. that may be interested in such a study.