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

Harland D. Cook

University of Nebraska at Omaha

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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

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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 Radler

Teacher Education

James Bevil

Educ. Adm.

Dwight Kellams

Chairman

3-17-1982

Date

TABLE OF CONTENTS

Chapter I		Page
Statement of the Problem		2
Purpose of the Study		2
Limitation of the Study		2
Definition of Terms		2
Significance of the Study		3
Procedures		3
Organization of the Study		5
Chapter II		
Review of Related Literature		6
Chapter III		
Table I	Resident Live Births	23
Table II	Minimal Data Required for SRT	24
Table III	Six-Year Enrollment Projected by SRT	25
Table IV	Projections With 10 Percent Variance	26
Table V	Carriage Hill Elementary School Area	27
Table VI	Golden Hills Elementary School Area	28
Table VII	G. Stanley Hall Elementary School Area	29
Table VIII	Parkview Heights Elementary School Area	30
Table IX	Trumble Park Elementary School Area	31
Table X	Tara Heights Elementary School Area	32
Table XI	LaVista West Elementary School Area	33
Chapter IV		
Summary		34
Conclusions		35
Recommendations		36
Bibliography		38
Appendixes		
Questionnaire I		39
Newspaper Article II		40

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-foot requirements per dwelling; number of lots being plotted in a particular area; and, the availability of financing.
- (3) To obtain local views about population determinants, 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 population 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, definition of terms, significance of the study and the procedures 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

¹Walter 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

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

³Ibid., 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 enrollments 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 percent. 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 enrollments 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

⁴Ibid., 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

⁵U.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. However, 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 continuing 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 assumption 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-

⁶Ibid., 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.

⁷Projections 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-

⁸Ibid., p. 20.

zation, increasing numbers of kindergarten students, and the desegregation of school systems enter into the enrollment 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 forecasting, and have posed unwieldy 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-

⁹Ibid., p. 21.

¹⁰Ibid., 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

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

¹²Ibid., 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 demographic 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 proportion 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 Environmental Variable Factors.

Minimal required data for forecasting student population 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 enrollment, 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 divided 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 survival 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 survival 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 multiplying 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 influencing 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-foot requirements per dwelling; and, the number 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 projecting enrollments in seven elementary school attendance areas have been used in Tables V through XI; one indicating 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 PAPIILLION-LAVISTA PUBLIC SCHOOLS
 RESIDENT LIVE BIRTHS
 1968 - 1978

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
 PAPPILLION-LAVISTA PUBLIC SCHOOLS
 MINIMAL DATA REQUIRED FOR SRT

GRADE	LIVE BIRTHS		1974		1975		1976		1977		1978		MEAN SR
	1973	1974	SR	223	231	172	205	SR	SR	SR	SR		
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 PAPIILLION-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	1979		1980		1981		1982		1983		1984		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	439	488	432	480	466	518	478	531	495	550	463	514	565
2	384	427	432	480	425	472	458	509	470	522	486	540	594
3	450	500	404	449	454	505	446	496	481	535	494	549	604
4	454	505	455	506	409	455	461	512	452	502	488	542	596
5	439	488	481	534	481	535	433	481	488	542	478	531	584
6	400	445	451	501	493	548	494	549	444	493	500	556	612
7	379	421	418	465	472	524	516	573	517	574	463	515	567
8	400	444	386	429	427	474	481	534	525	583	526	585	644
9	435	483	406	451	392	436	434	482	488	542	533	592	651
10	443	492	429	477	399	445	388	431	428	476	481	535	589
11	399	443	423	470	410	456	383	426	371	412	409	455	501
12	340	378	372	413	394	438	382	425	357	397	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

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

	1978	1979	1980	1981	1982	1983	1984
Plotted Lots							
1. Becker Addition	334	334	334	334	334	334	334
2. LaVista Addition	439	439	439	439	439	439	439
3. Crestview Addition	53	53	53	53	53	53	53
4. Briarwood I	62	62	62	62	62	62	62
5. Crestview Apt.							
TOTAL NUMBER LOTS	888	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

	1978	1979	1980	1981	1982	1983	1984
Plotted Lots							
1. Parkview Heights I	414	414	414	414	414	414	414
2. Harvest Hills	151	100	120	140	151	151	151
3. Parkview Heights IV	115	23	53	83	115	115	115
4. Tara Hills	160	0	10	30	50	70	90
TOTAL NUMBER LOTS	840	492	537	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

	1978	1979	1980	1981	1982	1983	1984
Plotted Lots							
1. Beadlis Addition	194	194	194	194	194	194	194
2. Gayer Addition	31	31	31	31	31	31	31
3. Beckers Addition	18	18	18	18	18	18	18
4. Beckers Addition II	26	26	26	26	26	26	26
5. Hogan Addition	8	8	8	8	8	8	8
6. Hogan Addition II	13	13	13	13	13	13	13
7. Svagera Addition	14	14	14	14	14	14	14
8. Tara Heights	400	410	419	419	419	419	419
9. Briarwood I	180	190	200	200	200	200	200
10. Hickory Hills	0	0	0	30	90	120	150
TOTAL NUMBER LOTS	1473	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

	1978	1979	1980	1981	1982	1983	1984
Plotted Lots							
1. LaVista Addition	502	502	502	502	502	502	502
2. Briarwood II	5	25	45	65	85	105	125
3. Crestview Addition	30	40	50	60	68	68	68
TOTAL NUMBER LOTS	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 forecast population have to do largely with efforts to understand 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 created an increased enrollment in the Papillion/LaVista Public School District. As a result of this program and construction, 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.

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APPENDIX I

PAPILLION/LAVISTA PUBLIC SCHOOLS

Questionnaire

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-foot 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.