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ABSTRACT

AN ANALYSIS OF THE EVIDENCE OF NEED FOR THE ESTABLISHMENT OF SELECTED JUNIOR COLLEGES IN MISSOURI WITH RECOMMENDATIONS FOR PREPARING FUTURE APPLICATIONS FOR ESTABLISHMENT

by R. Ernest Dear

This study is a concommitant to a larger study concerned with the development of a state-master plan for junior college development in Missouri in order to provide a logical guide to the orderly expansion of junior college functions to those parts of the state not currently served by a junior college. This study produces recommendations designed to encourage the creation of institutions of higher education which will truly meet the unmet educational needs of the specific geographic area.

It is the purpose of this research to (a) examine proposals for establishment of new or expanded districts since 1961 and the actual developments at these institutions in terms of meeting the needs identified in the proposal for establishment, and in adequately financing the proposed junior college; (b) to develop systematic procedures for reconciling any discrepancies; and (c) to identify, from the experience of existing junior colleges, any other salient variables which should be encompassed in the criteria and/or made a part of their application.

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This study is concerned with the analysis of applications submitted for establishment of "selected" junior college districts, analysis of methodologies for estimating potential enrollment for proposed districts based upon the experience of existing junior colleges, and the analysis of financial support necessary for proposed district as indicated by the existing districts' experiences.

The primary sources of information for the three analyses mentioned above are:

a. The review of literature which provided constructs for organization of the analyses, and examples of the application of establishment criteria, as used by authorities in the junior college field;

b. The applications submitted to the Missouri State Department of Education by each of the public junior colleges established since the Enabling Act of 1961;

c. Visitations to and interviews with the administrators of each of the institutions included in the analyses;

d. Reports, records and studies conducted by the Missouri State Department of Education and the Missouri Commission on Higher Education (the author has frequently interviewed personnel of these agencies regarding material presented in this study).

The presentation of data is designed to portray existing conditions through the use of descriptive statistics, mean and median, while relationship between variables developed in the analyses are computed as correlation coefficients employing Kendall's Rank Order Correlation (Tau) and Kendall's Coefficient of Concordance: W (both non-parametric statistical techniques).

The more significant findings of this study were:

1. Generally, the applications for the establishment of the "selected" Missouri junior college districts did not clearly portray nor adequately document the need for establishment;
2. The analysis of the four factors commonly employed in estimating potential FTE enrollment produced the following--
   a. The proportion of FTE enrollees to the total population of the district is 1.2 per cent (correlation coefficient .467, significant at the .36 level).
   b. The proportion of FTE enrollees to high school enrollment (grades 9-12) is 20 per cent (correlation coefficient .60, significant at the .042 level).
   c. The proportion of FTE enrollees to population 18-19 years old is 34 per cent (correlation coefficient .60, significant at the .042 level).

d. The relationship of FTE enrollees to high school graduates when computed using the Texas Research League formula indicated the highest correlation (correlation coefficient .80, significant at the .042 level);

3. In the projection of financial requirements, the most significant correlation is found to exist between per capita expenditure and enrollment in career or special-unclassified programs (correlation coefficient .80, significant at the .042 level). This emphasizes the importance of program development and the necessity of effective and continuous analysis of individual and community educational needs, both existing and anticipated.

In the final chapter, the author presents a suggested format for the conduct of studies and presentation of data for applications proposing the establishment of new or expanded junior college districts.

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By

R. Ernest Dear

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

College of Education

1968

To my father,
the late R. Ernest Dear,
Dean and President
of Gogebic Community College

ACKNOWLEDGMENTS

A research project such as this can only come to fruition when the writer receives continuous encouragement and assistance. Over the period during which this research was in progress, the writer has discovered many who were willing to provide the assistance in time and effort, and the encouragement through thoughtfulness and considerate exhortation. It is impossible to list all those to whom the writer is deeply indebted.

The author is most appreciative to Dr. Max S. Smith, chairman of his guidance committee, and to the guidance committee members, Dr. Max Raines, Dr. Charles Blackman, and Mr. Grafton Trout for their guidance, encouragement and helpful criticism.

The writer is indebted to Dr. Ben Morton, Executive Secretary, Missouri Commission on Higher Education; Mr. James Browning, Director of Junior Colleges, Missouri Department of Education; and to all of the administrators of Missouri Public Junior Colleges who provided the data upon which this study is based.

Special recognition is due to two very close friends, Dr. Richard L. Norris and Miss Lois Daleiden, for continual help and encouragement. Further, appreciation is expressed to Mr. and Mrs. Gordon Hill for their assistance in so many ways.

Deepest appreciation is expressed to my dear wife, Barbara, who has labored with me and given so much encouragement to me, during the entire graduate program. To my four children, Debra, Sandra, Craig and Linda, for their patience and forbearance, thanks from a proud and grateful father.

July, 1968 R. Ernest Dear

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CHAPTER I

INTRODUCTION

The increasing demands of America's technological society and a heightened interest in education as a vehicle of social and economic mobility appear to be taxing the existing higher educational capacities of individual states and the nation. The resultant pressure on higher education has burgeoned enrollments at public four-year colleges and universities and has fostered a dramatic expansion of the two-year community-junior colleges.

TABLE 1.--Growth in number and enrollment of public junior colleges 1961-67.[1]

Year	Number of Colleges	Enrollment	Per Cent of Increase in Enrollment
1961	405	644,968	-
1962	426	713,334	10.59
1963	422	814,244	14.14
1964	452	921,093	13.12
1965	503	1,152,086	25.07
1966	565	1,316,980	14.31
1967	648	1,528,220	16.03

[1]American Association of Junior Colleges, Junior College Directory, 1968 (Washington, D. C.: American Association of Junior Colleges, 1968), p. 7.

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The author of this study has served as a member of a research team employed by the Missouri Commission on Higher Education for the past year. This study team has been charged with the development of a plan and program for future development of public junior colleges in Missouri. This specific research effort is a concomitant of the major study, as it is more concerned with procedures for development of individual institutions rather than the greater consideration of designating districts for future development.

Missouri has experienced the same growth in the development of junior colleges as the nation, and the pattern appears likely to continue in the near future.

TABLE 2.--Growth in number and enrollment of Missouri Public Junior Colleges.[1]

Year	Number of Colleges	Full-Time Equated Enrollment	Per Cent of Increase in Enrollment
1961	6	3,051	-
1962	7	3,497	14.6
1963	7	4,813	37.6
1964	9	5,709	18.6
1965	9	13,291	132.8
1966	9	15,991	20.3
1967	10	18,795	17.5
1968	12	22,850	21.6

[1]Information gathered through interviews with Mr. James Browning, Director of Junior Colleges, Missouri State Department of Education.

Junior colleges have been a part of the Missouri educational system since 1915, when Kansas City and St. Joseph added the thirteenth and fourteenth grades to the public school systems. From that time until the General Enabling Act passed in 1961 by the 71st General Assembly of the State of Missouri, several other school districts extended their public school systems to include these additional two levels. Most of these developed as four-year junior colleges of the type described by Leonard Koos in Integrating High School and College, which embraced grades eleven through fourteen.[1] At the passing of the General Enabling Act of 1961, six public school district junior colleges existed.

Since the Act of 1961, four of these districts have expanded their legal district boundaries and have emerged as independent junior college districts, in addition, six other districts have been formed. In 1967, a majority (77%) of the citizens of Missouri resided within twenty-five miles of a public college (junior and four-year) or university.[2] This does not mean that 77 per cent of the population lived within twenty-five miles of an educational opportunity suited to their needs. The statement

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[1]Leonard V. Koos, Integrating High School and College (New York: Harper & Brothers, 1946), p. 1.

[2]Rex R. Campbell, Population and Higher Education in Missouri (Jefferson City, Missouri: Missouri Commission on Higher Education, 1967), p. 77.

does indicate that great care and coordination must be exercised in the expansion of the junior college system or any other system of higher education in Missouri.

The General Enabling Act of 1961 specified that any new district be measured against criteria of: (1) need, (2) enrollment, and (3) the valuation of taxable, tangible property; the standards to be applied, however, were left to the discretion of the State Board of Education, the supervising agency.

Significance of the Study

The State of Missouri has, at present, ten junior college districts in operation located within convenient commuting distance of approximately two-thirds of the state's total population (see Figure 1). These ten operating districts, however, encompass only 15 per cent of the counties of Missouri. There is a strong movement within the state to extend community-junior college functions to the one-third of the population which is unevenly dispersed over the remaining 85 per cent of the state area.

Need

Several communities have submitted applications for the establishment of junior college districts initiated by the Chamber of Commerce or similar groups. These applications are generally a part of an effort to bolster the

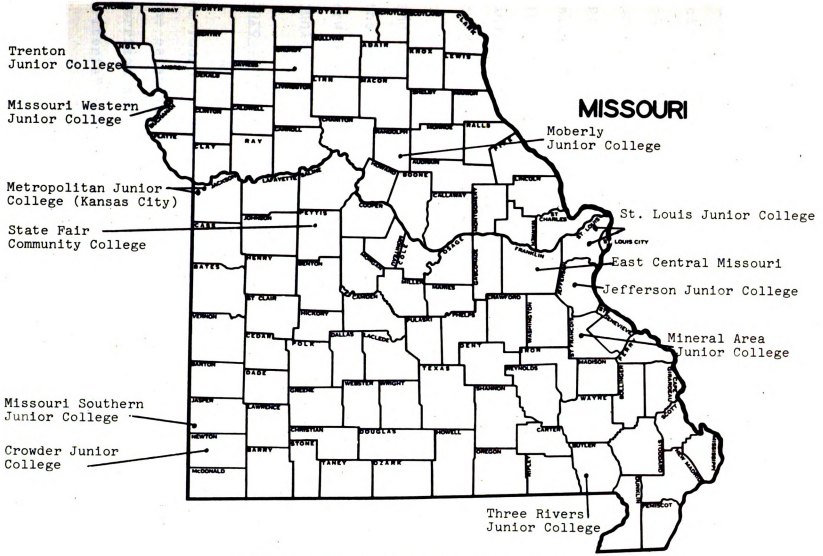

FIGURE 1.--Missouri Public Junior Colleges

economy and stem the ebb tide of declining population in the immediate area through the combined introduction of new industry and new educational opportunity. The effort is laudible except for the fact that the industry is induced to come to some communities by tax sheltered, municipal bond financed facilities. A double tax burden over and above the normal tax burden for the community is created (i.e., the taxpayer in these areas is asked to provide for the normal services of local government and elementary-secondary education, in addition to providing for the bonded-indebtedness incurred to attract business and industry, and further to support the establishment, construction and operation of a junior college).

In recent interviews, State Department of Education and the Commission on Higher Education personnel indicated the need for examining the three criteria used in approving new districts in light of the experiences of operating junior college districts.

Enrollment

A second justification for such an examination may be found in the general literature regarding criteria for the establishment of public community-junior colleges. Morrison and Martorana conducted a study of "establishment criteria" considering those in use in twenty-eight states

and those standards which in the opinion of professionals in the field should be utilized.[3]

For example, in terms of enrollment, one state required twenty-five full-time students in a one-year program (forty for the two-year program) while another state required five hundred full-time potential enrollment. The opinions of professionals in the field ranged from a starting enrollment of less than fifty to more than three hundred. Forty-eight per cent of the sample accepted one hundred-three hundred as an initial enrollment figure.[4] Thus one can see the diversity which exists in terms of establishing a criteria of enrollment.

Equally diverse is the number of methods utilized in computing estimates of enrollment potential. Morrison and Martorana report the following bases for computation: number of high school students; number of eighteen-nineteen year olds; the total public school enrollment in grades one-twelve and the total population of the districts.[5] Dr. C. C. Colvert of the University of Texas utilizes the experiences of existing junior colleges. Colvert divides the number of full-time equivalent students of a junior college into the actual twelfth grade enrollment in

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[3] D. G. Morrison and S. V. Martorana, Criteria for the Establishment of 2-Year Colleges (Washington, D. C.: U. S. Government Printing Office, 1960).

[4] Ibid., p. 32.

[5] Ibid., pp. 32-33.

district high schools for the previous two years. "The resultant quotient became an index which was necessary to place one full-time student in college that year." These indices are plotted for a period of eight years and a pattern of change in the indices is charted. This pattern is then used to predict enrollment for the next ten years.[6]

Dr. Raymond Young established ranges of potential enrollment, conservative to liberal, based upon projected eleventh and twelfth grade enrollments. His computation of enrollment begins conservatively at 15 per cent for five years.[7]

Dr. J. F. Thaden in a recent study in Michigan based his enrollment projections on the projected population of eighteen and nineteen year olds in the proposed district. These projections for a rural Michigan area began at 20 per cent and increased at the rate of 3 1/3 per cent for eight years.[8] Dr. Thaden suggests that, "curricular

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[6]C. C. Colvert, A State Programs for Public Junior Colleges in Colorado (Austin, Texas: University of Texas, 1963), p. 16.

[7]Raymond J. Young, Garold Dyke, and R. Ernest Dear, Shiawassee-Clinton Area Vocational-Technical Education Study (Ann Arbor, Michigan: University of Michigan, 1966), p. 114.

[8]Max S. Smith, Elmer Anttonen, J. F. Thaden, Dickinson Iron Area: The Feasibility of a Community College (East Lansing, Michigan: Michigan State University, 1966), p. 30.

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offerings tend to increase with increasingly larger total enrollments."[9] Visits to all of the junior colleges in Missouri lead this writer to question that assumption as applied to Missouri.

Dr. Thaden and the Morrison-Martorana Report mention the importance of program in relation to enrollment. Morrison and Martorana quote the comments of one of the professionals from Stephens College, Columbia, Missouri: "There can be no set criteria for the establishment of a junior college without specific reference to the purpose, programs and locale to be served."[10] It is, therefore, encumbent upon this study to examine the relationship of enrollment to "purpose, programs and locale" in Missouri.

Assessed Valuation

Continuing in the same vane, the criterion of "taxable, tangible property" must be examined for indications of relationship with purpose, program and locale. Currently, according to the Director of Junior Colleges, Missouri State Department of Education, the assessed valuation of a district must exceed $60 million, in 1964 the standard was $50 million. In the ten operating junior colleges in Missouri the valuation ranges from $12 million to $4 billion (the lowest valuation of any independently operated junior college district formed since 1961 is $47 million).[11]

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[9] Ibid. [10] Morrison and Martorana, op. cit., p. 69.

[11] Information gathered from Mr. Browning of the State Department of Education.

The Morrison-Martorana study indicates that the valuation standards range from $3 million to $100 million in ten states.[12] In utilizing this criterion many of the states do not specify whether this is assessed value or true value. New York specifies a true valuation of at least $150 million and an assessed valuation of at least $75 million.[13] Illinois specifies an assessed valuation of at least $75 million.[14] Iowa requires a "minimum area assessed taxable valuation of $150 million."[15]

This study will endeavor to identify any relationship which may exist between "taxable, tangible valuation" and purpose, program and locale.

Summarily, there is a need to examine the resultant programs and offerings of junior colleges in Missouri which have been established under the present criteria. It is now imperative that the evidential data produced in "applications for establishing" junior colleges be evaluated for their prognostic validity. The largest population centers, with the greatest taxable valuation, already have their

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[12]Morrison and Martorana, op. cit., p. 52.

[13]State University of New York, The Realization of a Community College: State-level Partnership (Albany: State University of New York, 1967), p. 3.

[14]Illinois Board of Higher Education, A Master Plan for Higher Education in Illinois (Springfield: The Illinois Board of Higher Education, 1964), p. 47.

[15]Iowa State Department of Education, Education Beyond High-School Age: The Community College (Des Moines: State of Iowa, 1962), p. 9.

junior college districts. New districts will be established in areas less favored, thus now is the time for re-evaluation of the criteria.

General Statement of the Problem

This study compares and analyzes the predictive evidential documents prepared for the establishment of selected junior college districts in Missouri and the characteristics of these institutions following establishment. This study will also analyze pertinent enrollment and financial data of all the junior college districts of Missouri as they relate to the development of sound criteria for the establishment of such institutions.

The criteria to be investigated are those specified in the "General Enabling Act, State of Missouri, 1961" which decrees that:

> . . . the state board of education shall establish . . .
> (1) Whether a junior college is needed in the proposed district;
> (2) Whether the assessed valuation of taxable, tangible property in the proposed junior college is sufficient to support adequately the proposed Junior College; and
> (3) Whether there were a sufficient number of graduates of high school in the proposed district during the preceding year to support a junior college in the proposed districts.[16]

It is the purpose of this research to: (a) examine proposals for establishment of new or expanded districts

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[16]Missouri State Department of Education, Missouri School Laws (Jefferson City: Missouri State Department of Education, 1966), p. 280.

since 1961 and the actual developments at these institutions in terms of meeting the needs identified in the proposal for establishment, in achieving and maintaining the predicted enrollment, and in adequately financing the proposed junior college; (b) to develop systematic procedures for reconciling any discrepancies; and (c) to identify, from the experience of existing junior colleges, any other salient variables which should be encompassed in the criteria and/or made a part of their application.

Objectives of the Study

In keeping with the nature and purpose of this study, the specific analyses made in this study are presented as objectives rather than hypotheses, a form advocated by Borg for this type of descriptive study.[17] The following objectives are, therefore, the major concern of this study.

1. To analyze the evidence of need as presented in the "Survey for Establishing" prepared by each of the ten institutions established since the General Enabling Act of 1961.
2. To develop a suggested format for presenting evidence of need for the establishment of new junior college districts in Missouri.
3. To analyze the relationship between taxable, tangible property, program offerings and student

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[17] Walter R. Borg, Educational Research: An Introduction (New York: David McKay Company, Inc., 1963), p. 36.

enrollment in selected existing junior colleges in Missouri.

4. To develop procedures for relating institutional purpose and taxable tangible property for the establishment of new junior college districts in Missouri.
5. To analyze the relationship between projected student enrollment as presented in the "Survey for Establishing" prepared by selected junior college districts and the actual enrollment following establishment.
6. To recompute projections applying formulae suggested by authorities in the junior college movement to determine the relative reliability or appropriateness of each method.
7. To develop a systematic procedure for the computation of student enrollment for the establishment of new junior college districts in Missouri.

Assumptions

1. It is assumed that the experiences of junior college districts formed on the basis of present criteria will provide information, upon which revision or modification of the present criteria may be made, to assist in the development of other junior college districts in the future.

2. It is assumed that the selected districts are similar in demographic, economic, educational, and political characteristics to areas of the State not presently served by junior colleges.
3. It is assumed that the criteria and formulae utilized by other authorities represent a logical, and therefore sound, basis for establishing viable junior college districts.
4. It is assumed that a comprehensive junior college program is or should be the goal of any prospective junior college district in the future.

Definition of Terms

Public Junior College.--A tax supported institution whose fundamental purposes are: (1) occupational education of post-high school level, (2) general education for all categories of its students, (3) transfer or preprofessional education, (4) part-time education, (5) community service, and (6) the counseling and guidance of students[18] in programs leading to a certificate or associate degree. (This term "junior college" is considered, for the purpose of this research, to be synonomous with "community college" or "community junior college." "Junior College" is the official designation in the legislation of the State of Missouri.)[19]

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[18]James W. Thornton, The Community Junior College (New York: John Wiley and Sons, Inc., 1966), p. 59.

[19]Missouri State Department of Education, op. cit., p. 281.

Evidence of Need.--Statements depicting unmet student or community necessities of a social, cultural, educational and economic nature.

Substantiated Evidence of Need.--Statements of need based upon objective and empirical studies or research with appropriate documentary data presented.

Unsubstantiated Evidence of Need.--Statements of need based upon subjective judgments or research alluded to by citation only.

Potential Enrollment.--A computed estimate of enrollment in terms of full-time equivalent students for the first year of operation of a junior college and for succeeding years.

Full-Time Equated (FTE) Student Enrollment.--The annual total number of semester hours taught by an institution divided by twenty-four (24) semester hours.[20]

Taxable, Tangible Property.--Includes valuation of real estate, tangible personal property, and public utilities, within a legal junior college district.

Application Analysis.--An analysis of the documents prepared for submission to the State Board of Education requesting authorization of an election to establish a junior college district.

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[20]Missouri State Department of Education, Junior College Section, "Missouri Public Junior Colleges, Memorandum No. 2," (unpublished mimeograph, Jefferson City: Missouri State Department of Education, 1967).

Program Comprehensiveness Index.--A ratio of "Regular Collegiate Transfer" and "Terminal and Occupational" full-time enrollments expressed in per cent of the total FTE enrollment as reported on Missouri Commission on Higher Education Form 1-B.

Per Capita Operational Cost.--The "grand total" college semester hours divided by twenty-four (24) semester hours determining the "grand total" FTE students which quotient will in turn be divided into "total current expenditures" for operation as reported on the State Department of Education Annual Report for Junior College.

Revenue Source Index.--A ratio for "state and local taxes," "student fees," "state aid and appropriations," and "other" revenue expressed in percentage of the "total educational and general revenue" reported on State Department of Education forms.

Limitations of the Study

1. In analyzing the "evidence of need," this study will consider all applications for establishment of new junior college districts in Missouri since the passage of the General Enabling Act of 1961.
2. In analyzing the criteria of "valuation of taxable, tangible property" and "enrollment potential," this study will be confined to six selected junior colleges.

a. The Metropolitan Junior College District of Kansas City and the St. Louis Junior College District will not be considered because they represent "taxable, tangible property" and "enrollment potentials" of such great proportions that no prospective junior college district of comparable potential will emerge in the foreseeable future.

b. Moberly and Trenton Junior Colleges will not be used as they are currently a part of K-14 school districts and were established prior to 1961. Benton-Pettis County and East Central Junior College Districts will not be included as they have not enrolled students as of this writing.

c. The following "selected" junior college districts are now in operation:

Newton-McDonald Counties Junior College District (Crowder College)

Jefferson County Junior College District (Jefferson College)

Mineral Area Junior College District (Mineral Area Junior College)

Jasper County Junior College District (Missouri Southern College)

Missouri Western Junior College District (Missouri Western College)

Three Rivers Junior College District

(Three Rivers Junior College)

Overview of the Study

This study is organized into seven chapters.

Chapter I.--The introduction includes the significance of the study, the statement of the problem, the objectives of the study, the assumptions, definition of terms and limitations of the study.

Chapter II.--The review of the literature examines: (a) the need for the study of Missouri junior colleges; (b) development of establishment criteria in general, and (c) establishment criteria for Missouri public junior colleges; and a summary.

Chapter III.--The methodology contains a description of the institutions being examined, descriptions of analysis of the narrative data, and the statistical techniques used to analyze quantitative data and a summary.

Chapter IV.--The analysis of the applications of Missouri junior colleges includes the application analysis, the analysis of the evidence, the findings and interpretations, and a summary.

Chapter V.--The analysis and application of criteria of enrollment potential from selected authorities contains a review of criteria of the selected authorities, and application of the criteria to the "selected" Missouri junior college districts, the findings and interpretations, and a summary.

Chapter VI.--The analysis of districts financial capacity provides the application of several methods of predicting costs of junior college development and operation, correlating these with the available assessed valuation within the "selected" junior college district. Included are the interpretations and findings of the data, and a summary.

Chapter VII.--The final chapter includes a summary of findings in the study, the conclusions drawn from these findings, and the implications for further study which became evident due to the findings and conclusions of this study.

CHAPTER II

REVIEW OF THE LITERATURE

Numerous related studies have been conducted since the establishment of the early junior colleges in Missouri. The more pertinent of these previous studies are presented to illustrate the perspective and context in which this study has evolved. The presentation will be organized in three sections: (a) literature related to the need for the study of Missouri public junior colleges; (b) literature related to the development of establishment criteria in general; and (c) literature related to establishment criteria for Missouri.

Literature Related to the Need for the Study of Missouri Public Junior Colleges

Any study of criteria for establishment, although designed to specify the guideline for establishment, of a single institution, or district, nevertheless, has implications for the development of junior colleges state-wide. Thus a recommendation of establishment criteria begins to imply state-wide planning and may further develop into a "Master Plan" for junior college development.

The request for the development of a Master Plan for Missouri junior college development is found frequently in a review of various studies. One encounters such a request in a 1929 study conducted by George D. Strayer and N. L. Engelhardt of Teachers College, Columbia University, entitled Publicly Supported Higher Education in the State of Missouri. This document reports:

> The State of Missouri now has no central authority to govern higher education in all its phases. There are junior colleges in the State subject to no state-wide plan. Competition among institutions will become inevitable unless some effort is made to coordinate the work of the several institutions. One possible solution of the problem would be for the Board of Curators of the University of Missouri to be invested with authority to approve or reject proposals for the establishment of junior colleges to be supported by municipalities in the State, and for the Board of Curators to undertake in every way to correlate the junior college program with the major program for the University of Missouri.[1]

The plea went unheeded at that point in history and the institutional attrition rate had claimed the junior colleges at Monett, Caruthersville, Iberia, and Jefferson City by the time of passage of Junior College Enabling Act of 1961.

Since the Act of 1961, other studies have pleaded for the development of a State Master Plan. The Academy for Educational Development report, Looking Ahead to Better Education in Missouri, suggests the following in Chapter V, Recommendation Number 3:

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[1]George D. Strayer and N. L. Engelhardt, Publicly Supported Higher Education in the State of Missouri, a report to the State Survey Commission Preliminary Report (New York: Teachers College, Columbia University, 1929), p. 10.

> The Missouri State Board of Education should develop a specific junior college district master plan to provide for junior college districts within commuting distance of most of the high school graduates. This master plan should be developed concurrently with a comprehensive plan for higher education in the state and should include the following elements:
> (1) A geographical division of the state designating the number of potential junior college districts which will, insofar as possible, offer opportunity for all Missouri citizens.
> (2) The potential enrollment in each designated area of the state.
> (3) The responsibility of the junior college districts for the education of freshmen and sophomores in relation to the state colleges and universities.
> (4) The responsibility of the junior college districts for occupational education.
> (5) The function of the junior college for continuing education.
> (6) A procedure for extensive local surveys to determine needs and potential.
> (7) The way by which each potential district should determine that it is ready to apply for authority to begin operation.
> (8) A procedure for continuing evaluation and modification of the master plan when so required.
> No new junior college district should be authorized until the plan is completed and approved.[2]

The reports cited previously, although separated by thirty-seven years, express a view which is spreading nation-wide; that is, the need to systematically marshall the human, financial, intellectual and managerial resources of a state in developing a sound system of junior colleges accessible to all of its citizens.

Within the calls for a state master plan and in other studies which were not as explicit, there appears a

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[2]Academy for Educational Development, Inc., Looking Ahead to Better Education in Missouri, A Report on Organization, Structure of Schools and Junior Colleges (New York: Academy for Educational Development, 1966), pp. 58-59.

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common and emphatic request for a clarification of the role of the public junior college. The First Coordinated Plan for Missouri Higher Education eminating from the Missouri Commission on Higher Education, September 1966, recommends:

> Definitive assignment of roles for the various sectors of public higher education should be made, consistent with the over-all objective of reasonable and equal opportunities for all.[3]

The Plan goes on to outline generally the roles of each of the three public sectors of higher education. The junior colleges are charged with the responsibility for "multiple programs" of college transfer, occupational education and "appropriate community-service activities."

In the report by the Academy for Educational Development, previously cited, the plea was made that:

> The State of Missouri should clarify the role of the junior colleges (a) in occupational education, vocational-technical education and other areas; (b) in relationship to vocational-technical centers; and (c) in relationship to state universities and colleges.[4]

Still another study directed by Dr. George L. Hall, and prepared under the auspices of the Missouri Commission on Higher Education, in November, 1964, states:

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[3]Missouri Commission on Higher Education, The First Coordinated Plan for Missouri Higher Education (Jefferson City: Commission on Higher Education, 1966), p. 2.

[4]Academy for Educational Development, op. cit., p. 56.

> The State of Missouri must define the role and function of the public higher institutions, the university, the state college and the junior college.[5]

It is arguments such as those presented above which make it encumbent upon this study to describe, in detail, the role of the junior college in Missouri. All of the most recent reports stress the "comprehensive nature" of the junior college. This study will endeavor to examine "comprehensiveness" as it is currently manifested in the junior colleges of Missouri and to suggest courses of action to insure comprehensiveness in the future.

Several of the more recent studies of education in Missouri have dealt with the development of program, especially in the vocational-technical area. The following statement is made in a very recent study conducted in Missouri and four other states:

> We found that most of the existing junior colleges are obviously not doing their fair share of vocational-technical training for Missouri needs. We believe that some employees of existing junior colleges do not relish occupational training responsibility. As a matter of fact, some are inclined to openly state their negative feelings toward vocational-technical education.[6]

The author must concur with the first portion of this

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[5]George L. Hall, Higher Education in Three Selected Areas of Missouri, A Report to the Missouri Commission on Higher Education (Jefferson City: Missouri Commission on Higher Education, 1964), p. 117.

[6]Unpublished Ozarkia Study Commission preliminary draft of a report prepared in 1968 on Vocational-Technical Education, pp. 29-30.

statement; that is, more must be done in the development of vocational-technical programs. However, this researcher found, in his visits to every junior college campus, an awareness of this deficiency and an expressed desire on the part of the key personnel to develop this area much further. It must be added that several of the institutions have made tremendous strides toward establishing exemplary programs in vocational-technical education.

In a detailed study of vocational-technical education in Missouri, appropriately named, A Gateway to Higher Economic Levels, Dr. J. Chester Swanson recommends the following:

1. More vocational-technical education programs be provided for persons who have completed high school or who are beyond the normal age for high school attendance and that such service be provided in more locations and for more occupations.
2. Priority for such post-high school programs be given to public junior colleges when they have the desire and ability to provide quality programs.
3. Junior colleges which provide vocational-technical education be designated area vocational schools for post-high school programs.[7]

Swanson suggests: that there is a need for additional junior colleges in Missouri; that junior colleges be subsidized only if they present a diversified program realistically related to the "demands of the labor market;"

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[7]J. Chester Swanson, A Gateway to Higher Economic Levels: Vocational-Technical Education to Serve Missouri (Berkeley, Calif.: University of California, 1966), p. VII.

and that five junior colleges (in St. Louis, Kansas City, Joplin, St. Joseph and Jefferson County) be recognized as area vocational schools.[8]

In another study concerned primarily with occupational education in Missouri higher education, Dr. Ken Brunner recommended,

> . . . that public junior colleges provide a major thrust in developing organized occupational curriculums to meet the needs of business, governmental, and industrial employers in Missouri, generally and in their service areas, particularly.[9]

Brunner also noted that the University of Missouri and the other state colleges are, or should be, offering occupational programs to meet the need of employers in their service area. However, he advocates the development of junior college districts in these areas, with the assistance and encouragement of the four-year institutions. He further recommends the development of administrator and faculty training programs at the four-year colleges and the University of Missouri to meet the need for staff in occupational instruction at the junior college level which is developing.[10]

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[8] Ibid., p. 48.

[9] Ken August Brunner, Organized Occupational Education in Missouri Institutions of Higher Education, A Study Prepared for the Missouri Commission on Higher Education (Jefferson City: Missouri Commission on Higher Education, 1965), p. 128.

[10] Ibid., pp. 130-34.

Of great import to any study of criteria is the question of the method and pattern of financial support. Under the present system of financing junior colleges, in Missouri, operational costs are met by utilizing three major areas of revenue--student tuition, local taxation, and state aid appropriations. Several of the previously completed surveys have made recommendations relative to the financing of junior colleges.

Presently Missouri junior college districts are authorized, under Section 178.870 of the Missouri School Laws, "to impose on property subject to the taxing power" of the district "without voter approval" a levy not to exceed:

> The annual rate of ten cents on the hundred dollars assessed valuation in districts having one billion dollars or more assessed valuation; twenty cents on the hundred dollars assessed valuation; thirty cents on the hundred dollars assessed valuation in districts having one hundred million dollars but less than five hundred million dollars assessed valuation; forty cents on the hundred dollars assessed valuation in districts having less than one hundred million dollars assessed valuation.[11]

The study by the Academy for Educational Development report questioned this taxing procedure as being based on the false assumption that per pupil costs are lower in larger junior college districts. The report cited two reasons why the assumption is not applicable to Missouri at the present time.

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[11]Missouri State Department of Education, Missouri School Laws (Jefferson City: Missouri State Department of Education, 1966), pp. 285-86.

(1) the larger junior college districts have much greater responsibilities in terms of larger numbers of students and a more diversified student body, and
(2) the larger districts are in urban areas where construction and operating costs are higher than in non-urban areas of the state.[12]

This researcher concurs with these reasons on the basis of visitations to the junior colleges of the state. Another reason closely allied to the large and diverse student body mentioned above is the development of sophisticated technical programs which require a higher per capita expenditure than the transfer program characteristics of the smallest junior colleges in the state.

The Academy's report recommends that "the sliding scale of maximum tax rates for junior college districts . . . should be replaced by a single rate applying in all junior college districts."[13] In interviews with the junior college presidents, they indicated agreement that the present structure was not sound.

NOTE: Property is assessed at 30 per cent of real value according to the Missouri State Division of Commerce and Industrial Development.[14]

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[12]Academy for Education Development, op. cit., p. 76.

[13]Ibid.

[14]Missouri State Division of Commerce and Industrial Development, Missouri Corporate Planning Guide (Jefferson City: Missouri State Division of Commerce and Industrial Development, 1967), Taxation, p. 18.

In consideration of the state's participation in financing the operation of junior colleges, it should be noted that the formula utilized has been of the standard flat grant nature. In 1965-66, the grant was $240 per full-time equivalent student (a full-time student was defined as the total number of eligible semester hours divided by 30 semester hours). The 1967-68 change raised the basic grant to $320 and the divisor for defining a full-time student was reduced to 24 semester hours. The new grant is based upon 50 per cent of approved operating cost or $320, whichever is least.[15]

The most recent change begins to approximate the recommendation of the Academy for Educational Development report which said that: "The State of Missouri should provide financial assistance to the public junior colleges to the extent of 50 per cent of the approved operating cost of each junior college."[16] The report also advocates that the definition of approved courses for state assistance should be expanded to include non-credit continuing education and remedial work as well as formal courses for credit.

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[15]Missouri State Department of Education, Junior College Section, "Missouri Public Junior Colleges, Memorandum No. 2," (unpublished mimeograph, Jefferson City: Missouri State Department of Education, 1967).

[16]Academy for Educational Development, op. cit., p. 75.

The First Coordinated Plan for Missouri Higher Education recommends that:

> State aid for the operation of public junior colleges should be 50 per cent, up to a maximum of $400 for each 24 semester hours. A three-year period of adjustment should be allowed existing institutions during which time no reduction in the present formula for state aid should be made. Operational costs should be defined in the same way as they are for the four-year public institutions of higher education.[17]

This recommendation was made in 1966, prior to the latest change in the state aid formula described above.

Dr. Brunner in his study suggested that:

> . . . increased financial support should be provided occupational education programs by the state as well as the local units of government. . . . State funds should also provide a major stimulus to expand occupational education in the public junior colleges. This must be done to enable Missouri's institutions of higher education to produce the needed numbers of qualified technicians and other semi-professional workers.[18]

Dr. Swanson's study advocates that, "the junior college should be operated by a local school district and be financed basically by the local district. Junior colleges should, however, have major financial aid from the State."[19]

Another important area of financial consideration is capital outlay. Presently, the responsibility for capital outlay rests in major proportion with the local district,

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[17]Missouri Commission on Higher Education, op. cit., p. 11.

[18]Ken August Brunner, op. cit., p. 134.

[19]J. Chester Swanson, op. cit., p. 48.

however, approximately 22 per cent of the funds allocated to Missouri under Title I of the Higher Education Facilities Act have been "reserved for public two-year community college and technical institutes."[20]

The report of the Academy for Educational Development recommends "The State Department of Education should conduct cost studies preparatory to making recommendations covering state assistance toward the building costs of junior colleges."[21]

The literature presented above is cited to illustrate the vital interest and energy invested in the study of higher education, and especially the junior college, in Missouri. It also serves to justify this study as an important contribution to the junior college movement in this state.

Literature Related to the Development of Establishment Criteria in General

The development of criteria for the establishment of junior or community colleges has long been the subject of study for those interested in the administration of these institutions. An historical perspective is included in

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[20]Missouri Commission on Higher Education, Summary Report of Federal Funds Allocations (Jefferson City: Missouri Commission on Higher Education, Revised May 3, 1967), p. 1.

[21]Academy for Educational Development, op. cit., p. 75.

almost all such studies, however, most of these historical reviews parallel that presented by Morrison and Martorana.[22]

The earliest study, made in 1929, was that of T. C. Holy which proposed:

1. Minimum enrollment of 150 students for a public junior college.
2. High school of at least 900 to provide the minimum junior college enrollment.
3. City population of at least 17,000 for a city considering establishing a junior college.
4. Per student costs of approximately $400.
5. A level of approximately 50 per cent, or at least $30,000, borne by district.
6. A 2 mill levy on a taxable valuation of $15,000,000.
7. If a local district is to provide the total cost of operation, an assessed valuation of at least $30,000,000.[23]

The 1929 California law regarding junior college districts required that no district could be organized with less than an assessed valuation of $25 million and an average daily attendance in high school of 1,000. The law further specified that continued operation of a junior college was contingent upon a minimum enrollment of two hundred students after the second year of operation. In the discussion of the above law, written in 1930, W. C. Eells also cited one state in which a number of junior colleges were operating with enrollments of less than one hundred students and were supported exclusively by tuition.[24]

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[22]S. V. Martorana and D. G. Morrison, Criteria for Establishment of 2-year Colleges (Washington: U. S. Government Printing Office, 1960).

[23]T. C. Holy, "Criteria for the Establishment of Public Junior Colleges," The High School Teacher, Vol. 5, Number 4 (April, 1929), 118-20, 133-34.

[24]Walter Crosby Eells, The Junior College (Cambridge, Mass.: Houghton-Mifflin Co., 1931), p. 132.

Dvorak and Davidson suggested "an enrollment of two hundred students and an annual budget of $30,000 to $40,000 (approximately $200 per student per year) for operation and maintenance. . . ." An analysis of 455 junior colleges in existence in 1931-32 indicated that "75 per cent of the private, 78 per cent of the religious, and 60 per cent of the public junior colleges" were below that standard.[25]

Garrison, in 1938, wrote a rebuttal to the imposition of the standard advocated by Dvorak and Merrick in their article of 1933. He cited the experience of a junior college founded in 1932, which originally had feared difficulty in meeting the requirement of forty students at the end of the second year, but which had prospered and within six years had an average enrollment of one hundred thirteen per semester. He further pointed with pride to the fact that all transfer students "with one exception" had achieved at least "average college success." Garrison concluded, "May it not be well to endeavor to determine 'How small can a junior college be?'"[26]

In 1936, in a thesis prepared at New York University, John S. Allen investigated "Criteria for the Establishment

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[25]August Dvorak and N. L. Merrick, "How Large Should a Junior College Be?" Junior College Journal, Volume 3, Number 4 (January, 1933), pp. 194-98.

[26]Lloyd A. Garrison, "How Small Can a Junior College Be?" Junior College Journal, Volume 9, Number 3 (December, 1938), pp. 118-21.

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of Public Junior Colleges." In this work he developed four major criteria and examined the failure of junior colleges as they related to established criteria.[27]

Martorana summarized Allen's major criteria as follows:

1. Community ability to support a public junior college as indicated by sufficient taxable wealth to raise 50 per cent of total costs (estimated at $350 per student).
2. Community need for a public junior college as indicated by:
   a. No other institution of collegiate grade that can be made to serve needs of community.
   b. 250 high school graduates per year.
   c. 40 per cent of recent high school graduates now attending college.
   d. Survey of intentions of high school junior and seniors with respect to education beyond the high school.
   e. 1,100 enrolled in 4 year high schools of the community.
   f. Survey of parents intentions for furthering their childrens education.
   g. 1,000 in average daily attendance in high schools in community.
   h. 19,000 population.
   (NOTE: Approximate figures; most weight given to those at top of the list.)
3. Community interest in a public junior college, as indicated by the results of a nonpolitical school election on a junior college, with at least a simple majority of votes cast being in favor.
4. Approval by State authority, acting on the basis of a survey by the State Department of Education.[28]

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[27]John Stuart Allen, "Criteria for the Establishment of Public Junior Colleges" (unpublished doctoral dissertation, New York University, 1936), pp. 222-237.

[28]Martorana and Morrison, op. cit., pp. 6-7.

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Hugh Price presented an analysis of twelve state and national surveys relative to junior college need. Although the surveys dealt with other matters, they did touch upon some elements of establishment criteria. Suggested minimum enrollments ranged from one hundred seventy-five to four hundred students although three surveys made no mention of minimum enrollment. Cost of operation per student enrolled was another point of survey. The range of costs suggested was $180 to $750. The most frequently suggested cost was $200. Relationship to existing colleges was discussed, however, no clear pattern of relationship seemed to exist. The two national surveys did include a concern for the avoidance of duplication and urged that "mutual interest and understanding" be developed.

Most important, in terms of this study, was Price's analysis of breadth of curriculum as it relates to other considerations for establishing and maintaining junior colleges. All twelve of the studies suggest that the curriculum offerings should include "terminal general programs, terminal vocational programs, and college preparatory." Seven of the surveys recommended that "adult education" be included as an "essential part of the curriculum."[29]

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[29]Hugh G. Price, "Planning for Public Junior College Development Through State and National Surveys," Junior College Journal, Volume 20, Number 1 (September, 1949), pp. 16-22.

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Bogue reports that the 1947 convention of the American Association of Junior Colleges drew a list of general principles which included:

1. A minimum secondary school enrollment of 1,000 students;
2. An assurance of an enrollment of at least 200 students to establish economical and effective operations;
3. A taxable assessed valuation to provide the needed capital outlay, and an adequate assessed valuation per average daily attendance to carry a minimum program;
4. A financial support level from local, State, or both sources sufficient to yield a minimum of $200 per student per year; and
5. A petition from voting citizens requesting establishment of a 2-year college.[30]

Bogue further observed that the needs are:

1. An honest state plan for further education of all youth and adults in their home communities;
2. Junior-college districts that are large enough to support the colleges with state aid;
3. Enough students to warrant their establishment; and
4. The will of the people to have them.[31]

Leonard V. Koos writing in School Review in 1949 suggested the necessity of state-wide study as a prelude to community-college development and emphasized the importance of a breadth of program offerings.[32]

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[30]Jesse P. Bogue, The Community College (New York: McGraw-Hill Book Co., Inc., 1950), pp. 97-98.

[31]Ibid., p. 307.

[32]Leonard V. Koos, "Essentials in State-wide Community College Planning," The School Review, Volume 57, Number 7 (September, 1949), p. 341.

A major contribution cited frequently in other studies is the dissertation of August W. Eberle in 1952. In his work Eberle suggested "optimum" and "minimum" criterion for both independent and associated community colleges. Associated community colleges are those operated in combination with a high school. Eberle's suggested criteria for an independent community college were:

> Mimimum--1,000 full and equivalent full-time students; serving a population of 40,000.
> Optimum--1,500 full and equivalent full-time students at an operational cost of $350 per student.

His suggested criteria for an associated junior college were:

> Minimum--700 full and equivalent full-time students; serving a population of 30,000.
> Optimum--1,000 full and equivalent full-time students; serving a population of 40,000.[33]

In a study proposing criteria for establishment of junior colleges in Michigan, by Russell Foster Fink in 1952, five criteria were listed. Fink established his criteria by studying the plans and requirements of over twenty states and through reviewing the literature. He suggests the following:

> 1. High school enrollment is a basic criteria: 500 students enrolled in grades IX-XII should be the minimum, with 800 in grades IX-XII as a more desirable minimum;

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[33]August William Eberle, "Size of Satisfactory Community Colleges" (unpublished doctoral dissertation, University of Wisconsin, 1952), pp. 180-84.

2. Approval of a representative, independent, non-political state educational agency is desirable;
3. Approval of the local community, ascertained by petition, referendum, or intensive community study is desirable;
4. Existing educational institutions cannot be ignored. Neither should community college opportunity be denied young people of a given community simply because an established institution of higher education operates in the community.
5. Minimum tax valuation is of little use as a criteria. In Michigan, at least, if the high school enrollment is met, the tax valuation minimum generally is met.[34]

Fink applied the five hundred and eight hundred enrollment criteria to the high school districts of Michigan to determine which communities could qualify by virtue of their enrollment. He then applied a cost per student formula to determine the finance needed from local tax funds and found that all districts which had sufficient enrollment had the necessary valuation, thus, his fifth criterion statement.

In 1955, Floyd Boze suggested criteria for use in Texas which were far different from those indicated by Eberle. Boze recommended:

1. An enrollment of 200 to 300 students for the most economical operation in terms of per pupil cost;
2. A district population of 15,384 to 23,077 providing from 333 to 500 high school graduates per year. A number sufficient to support a junior college of 200 to 300 students.

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[34]Russell Foster Fink, "Some Criteria for the Establishment of Community Colleges, With Specific Reference to Michigan" (unpublished doctoral dissertation, Michigan State University, 1952), pp. 157-59.

In addition to the differences noted above, Boze recommended:

3. A majority vote of the residents of the area to be served should favor establishment.
4. Local taxation should support 36 per cent of the total cost of the institution.
5. No junior college should be located closer than 30 miles to an institution with a similar program.
6. The junior college should be a two-year institution.
7. College income should accrue from local taxation, state appropriations, miscellaneous fees, and student tuition amounting to approximately $80 per year for state students, and $180 per year for out-of-state students.
8. The junior college should plan to spend $538.77 per student per year for all purposes.[35]

In the National Society for the Study of Education Yearbook of 1957, Bogue and Burns discuss the "restrictions" upon the establishment of public junior colleges. These authors divided the "restrictions" into two general classifications: (a) minimum requirements for the establishment of public junior colleges which includes the provision of satisfactory answers to the following:

1. Do the citizens in the geographic area want a junior college?
2. Is there a large enough potential of students to assure an enrollment needed for a desirable educational program?

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[35]Floyd D. Boze, "Criteria for the Establishment of Public Junior Colleges in Texas" (unpublished doctoral dissertation, University of Tennessee, 1955), pp. 192-210.

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3. Is the potential in financial resources large enough to support the junior college adequately?

(b) Legal procedures for establishing public junior colleges which include:

1. Ascertaining by public agency whether the minimum requirements have been met;
2. Describing the form of the petition to be used in calling for an election;
3. Naming the agencies (state board of education, local board or boards) whose approval is necessary before holding the election.[36]

In another portion of the same yearbook, E. K. Fretwell, discusses, "The Principle of Need and Demand" in which he identifies four needs, one or more of which may justify the establishment of a public junior college. These are:

1. No other near-by colleges;
2. Existing institutions crowded;
3. High cost of tuition; and
4. Appropriate programs not offered elsewhere.[37]

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[36]Jesse P. Bogue and Norman Burns, "Legal and Extra-legal Influences for Improving College," The Public Junior College, Chapter XII, Fifty-fifth Yearbook of the National Society for the Study of Education (Chicago: University of Chicago Press, 1956), pp. 235-36.

[37]Elbert K. Fretwell, Jr., "Establishing a Junior College," The Public Junior College, Chapter XIV, Fifty-fifth Yearbook of the National Society for the Study of Education (Chicago: University of Chicago Press, 1956), p. 286.

In a study conducted by S. V. Martorana, in Michigan, in 1956, considerable discussion is devoted to methods of determining the proposed district's ability to meet the establishment criteria.

The minimum enrollment criteria utilized by Martorana for this study was "200 full-time students in the regular day program." In order to compute the potential for a district, three methods were employed, namely:

1. School districts that have enrolled 800 students in grades 9 to 12;
2. Counties that have 1,000 persons 18-19 years of age; and
3. Counties that have 2,000 persons of age 19-22 years.

The wisdom of using all three of these measures came out in the analysis of the various counties and localities in Michigan when it was discovered that using only one of the three measures, regardless of which one may be chosen, would leave out some areas which clearly qualify under one, or in some cases two, of the other criteria.[38]

Tyrus Hillway in his book, The American Two-Year College, discusses briefly conditions of establishment. He cites a range of from 5,000 to 50,000 population as criteria employed in various states and then suggests a minimum of 15,000 as "adequate" for "most states." When high school enrollment is used as a criterion, Hillway recommends a high school enrollment of 1,000 students in order to produce at least 200 junior college enrollees. In terms of

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[38] S. V. Martorana, The Community College in Michigan, Staff Study No. 1 Prepared for the Michigan Legislative Study Committee on Higher Education (Lansing: Michigan Legislative Study Committee on Higher Education, Revised Edition, June, 1957), p. 105.

a prospective junior college district's financial ability, Hillway cites a range of assessed valuations from $3,000,000 to $20,000,000. The recommendation the author presented was $10,000,000 assessed valuation.[39]

Morrison and Martorana, members of the staff of the United States Office of Education, in 1960, compiled a summary of Criteria for the Establishment of 2-Year College. In it a wealth of information is presented, however, most germane to this study are the proposed criteria for public two-year colleges. These are:

Minimum and Potential Enrollments.--Two hundred-four hundred enrollment was the minimum with four hundred being preferred for a comprehensive program. It was suggested that estimates are most frequently based upon high school enrollment, high school graduates or related to the number of persons eighteen or nineteen years old. "Relatively few sources supported use of enrollment estimates made in terms of total population."

The potential enrollment at the end of five years was recommended to be four hundred full-time students based upon an enrollment of nine hundred students in a three-year high school or 1,200 to 1,500 students in a four-year high school.

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[39]Tyrus Hillway, The American Two-Year College (New York: Harper and Brothers, 1958), pp. 213-14.

Financial Support.--The student should not be expected to finance more than 35 per cent of the per capita cost. The local district should not be judged on its assessed valuation but its ability to make up the difference between the student's and state's shares combined subtracted from the per capita cost.

Accessibility of Location to Students.--One hour commuting time each way was considered as practical limit of maximum daily commuting time.

Evidence of Local Interest.--"The study should be designed to provide an accurate picture of the local unmet need for higher education, the projection of high school enrollment and potential college enrollment, the present and expected industrial development, and other factors as specified by the approving agency." High school student aspiration studies were also recommended.

Proximity to Other Institutions of Higher Education.--"As more progress is made in state-wide planning of higher education, there will be less necessity for legal or regulatory restrictions in the proximity of institutions."[40]

The American Association of Junior Colleges, in 1962, published two documents concerning the legal requirements for establishing community-junior colleges. The first of these, the proceedings of a conference sponsored by that

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[40]Morrison and Martorana, op. cit., pp. 61-64.

organization's Commission on Legislation, provided the following recommendations.

1. Financial Support--The state plan should make funds available on an equalization basis to support a certain level of expenditures in each community college district while maintaining an equal tax rate.
2. Tuition--Public community colleges should be tuition-free.
3. Defining needs--A state plan for supporting community colleges should be based on a definition of need which emphasizes primarily the educational needs of the population to be served rather than assessed valuation.
4. Recommended enrollment--A potential enrollment of 500 full-time students seems to be essential for the development of a comprehensive program.[41]

In the second publication, a handbook to assist those charged with the responsibility for developing state legislation, seven "principles for legislation" were presented. The first two of these are pertinent to this study.

Principle I--Community junior colleges should be established in accordance with an over-all state plan for higher education which provides for diversified educational programs and a geographic distribution of opportunity.

Principle II-A local community junior college should be established only subsequent to a survey which will determine the relationship of the proposed district to the state plan and the readiness of the proposed district to accept its share of responsibility.

The handbook goes on to suggest that the local survey report should contain:

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[41]Proceedings of a Conference sponsored by the Commission on Legislation, Establishing Legal Bases for Community Colleges (Washington, D. C.: American Association of Junior Colleges, 1962), pp. 30-31.

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1. Socio-economic and population descriptions of the proposed district;
2. Maps showing topography, road systems, population centers, and main commuting routes to a proposed campus center;
3. Follow-up studies of high school students in previous years;
4. Prospective community college students;
5. Programs needed in the community junior college;
6. Post-high school programs now in operation in the area to be served;
7. Programs of high school level in the area;
8. Facilities and/or sites available which may be used either temporarily or permanently by the college;
9. Guidance facilities now available;
10. Teaching staff available;
11. Community attitude--evidence of community support, hostility, or indifference; and
12. Extent of local resources for financing the community junior college.[42]

More recently, J. S. Spencer, in a doctoral dissertation has suggested seven "specific criteria" for the establishment of regional junior colleges in Illinois. His recommendations are presented below.

Criterion One: Enrollment
Minimum enrollment for a comprehensive regional junior college should be 3,000 full-time equivalent students. Branch campuses not offering vocational, semi-technical or semi-professional curricula may operate with a minimum of 500 full-time equivalent students.

Criterion Two: High School Enrollment
A high school enrollment of 25,000 will provide sufficient junior college students to meet Criterion One.

Criterion Three: Regional Population
A minimum population base for a regional junior college district should be 475,000.

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[42]Commission on Legislation, American Association of Junior Colleges, Principles of Legislative Action for Community Junior Colleges, a Handbook (Washington, D. C.: American Association of Junior Colleges, 1962), pp. 3-4.

Criterion Four: Equalized Assessed Valuation
The minimum assessed valuation sufficient to ensure the local districts ability to finance its share of all annual operating and capital outlay expenditures on a levy not to exceed twelve and one-half cents per hundred dollars of equalized assessed valuation (60 per cent of true cash value).

Criterion Five: Geographic Area
A comprehensive regional junior college or a branch thereof shall be available at a distance no greater than 20 miles from the home of practically all residents of the area.

Criterion Six: Site
Two hundred acres required for comprehensive regional junior college. Building space needs are computed as one hundred square feet per full-time equated student.

Criterion Seven: Location of Main Campus
The site of the major campus of a comprehensive regional junior college should be the population center of the district.[43]

The basis for many of the above criteria, as cited by the author was the vocational and technical education study of William P. McLure[44] and the experiences of the California system of junior colleges.

In the very recent work by Blocker, Plummer and Richardson, the authors make the following observation.

> The establishment of a two year college is no longer a simple and uncomplicated process, particularly in states which have developed a systematic and complete plan for higher education

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[43]James Sigel Spencer, "Criteria for the Establishment and Operation of a State-wide System of Comprehensive Junior Colleges" (unpublished doctoral dissertation, University of Illinois, 1966), pp. 143-52.

[44]William P. McLure, George C. Mann, Herbert M. Hamlin, M. Ray Karnes, and P. Van Miller, Vocational and Technical Education in Illinois: Tomorrow's Challenge (Springfield: Office of the Superintendent of Public Instruction, 1960), pp. 137-39.

> within their boundaries. If educational opportunities are to be made available to all on an economical basis, state-wide coordination and planning are essential.[45]

Thornton concludes in his book, written in 1966,

> . . . that laws should provide for local initiative in the establishment of junior colleges, protected by impartial fact-finding services from the state and by certain minimum standards for state and local support and for prospective enrollment at the junior college.[46]

Literature Related to Establishment Criteria for Missouri Public Junior Colleges

In Missouri, as elsewhere, the initiation of junior colleges into the state educational system generated an interest in this innovation that was reflected in research of doctoral candidates and other students of education. The Strayer and Englehardt[47] study cited previously represented the interest of the legislature in higher education (and in the junior colleges) and presented the "broad picture" approach. Equally as important and enlightening are the more specific studies cited at this time.

Rosenstengel, in his doctoral dissertation in 1931, examined the selection of curricula to be offered in the

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[45]Clyde E. Blocker, Robert H. Plummer, and Richard C. Richardson, Jr., The Two-year College: A Social Synthesis (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1965), p. 81.

[46]James W. Thornton, The Community Junior College (New York: John Wiley and Sons, Inc., 1966), p. 91.

[47]Strayer and Englehart, op. cit.

public junior college. In his work he defined the functions these institutions should provide for enrollees as:

1. Preparation for institutions of higher learning;
2. Terminal education, both cultural and vocational training for particular occupations usually designated as semi-professional; and
3. Short courses for adults with special interests.[48]

Thus, we see that the expanding role of the junior college positted in the early 1930's was not unlike the commonly accepted functions of today.

Another study, Hilton's[49] in 1945, studied the aims of public junior colleges as stated in the institutions published catalogue. The ten most frequently mentioned were:

1. Preparation for the junior year
2. Terminal education
3. Vocational training
4. Cultural training
5. Intelligent citizenship
6. Pre-professional training
7. Comprehensive or general education
8. Educational and vocational guidance
9. Economy of time and expenses, and
10. Adult education.

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[48]William E. Rosenstengel, "Criteria for Selecting Curricula for the Public Junior College" (unpublished doctoral dissertation, University of Missouri, Columbia, 1931), p. 9.

[49]Wallace A. Hilton, "Some Functions of Education at the Junior College Level" (unpublished doctoral dissertation, University of Missouri, Columbia, 1945).

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This study served to further define the public junior college role in Missouri.

In a study proposing the location of junior colleges in Missouri in 1933, Summitt proposed the consideration of "minimum enrollment, high school enrollment, high school graduates, enumeration, total population and types of lower schools and programs;"[50] as criteria for establishing public junior colleges. Summitt then applied these criteria to counties across the State of Missouri and in one case applied them to a two county area.

Reynolds in a study of terminal curricula in junior colleges, stated that a survey of 1938 seniors indicated that 50 per cent were interested in occupations requiring additional training beyond high school, while 31 per cent planned to enter an institution of higher education. His study went on to indicate that 28 per cent did go. Another interesting revelation of Reynolds study was that the per cent of high school graduates going on to institutions of higher education was increased two and one-half times when a college is present.[51]

While examining the literature of public junior colleges in Missouri, one becomes keenly aware of the close

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[50]William K. Summitt, "The Location of Public Junior Colleges in Missouri" (unpublished doctoral dissertation, University of Missouri, Columbia, 1933), pp. 277-280.

[51]Elmer J. Reynolds, "Terminal Curricula in Public Junior College" (unpublished doctoral dissertation, University of Missouri, Columbia, 1940), p. 131.

relationship between junior college development and the movement for reorganization of public school districts. George D. Englehart,[52] in a study of St. Francois County, Missouri in which Flat River Junior College was located, advocated criteria for the development of an "educational service area." The factors which he deemed important were: general welfare of the child; curricular offerings; leadership of the community; social and economic unity of the community; geographical features; acceptability of service area to the people; the kind of people within the area; transportational--road, rivers, etc.; and the cost of a transportation program.

The idea of an "educational service area" as the logical basis for organizing enlarged school administrative units was also the thesis of Schott, in 1947. He provided a definition of community as "a group of people living fairly close together and acting together to carry on their economic, social, spiritual, cultural, and educational activities."[53]

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[52]George D. Englehart, "Proposed School Service Areas at St. Francois County, Missouri" (unpublished doctoral dissertation, University of Missouri, Columbia, 1945).

[53]Marion S. Schott, "The Community Service Area" (unpublished doctoral dissertation, University of Missouri, Columbia, 1947), p. 185.

Mittler,[54] in 1956, proposed a five county reorganization into an "educational service area" providing for establishment of a community junior college. He estimated the initial enrollment of this college as between 150 and 200 students or 25 per cent of the high school graduates of the previous year. He also estimated that 60 per cent of the first year enrollment would return for the second year thus providing institutional growth.

Dr. Charles McClain,[55] in his doctoral dissertation in 1961, produced a study which is closely related to this study. His methodology was: (a) to develop establishment criteria for Missouri, as no official formulated criteria existed at that time; and (b) to apply these criteria to one county in Missouri. A very major difference between McClain's and this study is to be found in the "limitations" of his study. He states, "Existing junior colleges in the State of Missouri were not used in the development of the criteria."[56] This study bases its

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[54]Eli F. Mittler, "Proposed Reorganization for Education for Five Counties of Missouri" (unpublished doctoral dissertation, University of Missouri, Columbia, 1956).

[55]Charles McClain, "Criteria for the Establishment of Public Junior Colleges in the State of Missouri" (unpublished doctoral dissertation, University of Missouri, Columbia, 1961).

[56]Ibid., p. 5.

findings heavily upon the experience of existing Missouri Junior Colleges.

McClain suggests the following as criteria:

A. Local interest
   1. Unmet need for higher education,
   2. High school enrollment,
   3. Population of the area,
   4. Supplimentary data that might influence the founding of a local public junior college,
   5. Interest survey of seniors concerning the junior college;
B. Minimum enrollment of 400 full-time day students;
C. High school enrollment of 2,000 students in grades 9-12; and
D. Financial ability to provide $600 per annum minimum support per student with the state providing 35 per cent, the local district 30 per cent and the student 35 per cent of the total cost.[57]

A two mill tax levy was proposed as adequate to provide local support.

Richard L. Norris in a recently complete dissertation at Michigan State University, analyzed the transfer curricula of junior colleges in Missouri and concluded that an enrollment of 400 full-time equivalent students should be the required minimum in the transfer program alone.[58]

Norris conducted a survey of the opinions of junior college and other higher education leaders in Missouri.

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[57] Ibid., p. 76.

[58] Richard L. Norris, "A Study of Selected Institutional Factors and Their Relationship to Breadth of the College Transfer Curriculum in Missouri Public Junior Colleges" (unpublished doctoral dissertation, Michigan State University, 1968), p. 190.

The responses of these individuals indicated that 87 per cent advocated "a minimum enrollment of 400 or more FTE students for establishment of a comprehensive junior college and 30.4 per cent indicated a minimum enrollment should be 1,000 or more. . . ."[59]

In terms of cost, the respondents indicated that one-sixth of the per capita cost for operation should be borne by the student, one-third by the local district, and one-half by the state. The responses to the questionnaire also indicated that a majority favored a minimum per capita operating level of $600, with 48 per cent indicating $800 or more. When asked to suggest a desirable level, 56 per cent of these educators indicated a per capita operating expenditure level of $1,000 or more.[60]

As the reader may remember from previous discussions in this study, the General Enabling Legislation for Junior Colleges passed by the 71st Missouri Legislature, which set forth guideline criteria for establishing new junior college districts, specified that the State Board of Education, the supervisory agency, shall determine:

> (1) Whether a junior college is needed in the proposed district;
> (2) Whether the assessed valuation of taxable, tangible property in the proposed district is sufficient to support adequately the proposed junior college;

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[59] Ibid., p. 185.

[60] Ibid., pp. 152-54.

(3) Whether there were a sufficient number of graduates of high school in the proposed district during the preceding year to support a junior college in the proposed district.[61]

Currently, the State Board of Education is requiring that a survey be initiated in the local community portraying the need for a junior college. In terms of the assessed valuation criteria, the supervisory agency is requiring a minimum of $60,000,000 assessed value of taxable, tangible property and an enrollment potential of four hundred full-time equated students, standards which have been utilized for several years.[62]

More recently, however, other studies in Missouri and elsewhere have indicated that the development of truly comprehensive junior colleges require larger enrollments. One of the most important to Missouri, The First Coordinated Plan for Missouri Higher Education advocates "a minimum enrollment potential of at least 750 full-time equivalent students within four years."[63]

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[61]Missouri State Department of Education, op. cit., p. 280.

[62]Information gathered in interviews with Mr. James Browning, Director of Junior Colleges, State Department of Education.

[63]Missouri Commission on Higher Education, op. cit., p. 11.

Discussion of the Literature: Summary

The review of literature has been presented in three sections: (a) the Need for the Study of Missouri Junior Colleges; (b) Literature Related to the Development of Establishment Criteria in General; and (c) Literature Relative to Establishment Criteria for Missouri Public Junior Colleges. For each section this summary will discuss the information gleaned from the literature and its contribution to this study.

The Need for the Study of Missouri Junior Colleges

In this section the results and recommendations of the studies conducted revealed the need for continued study of Missouri junior colleges. Initially, there is indicated a need for the development of a state master plan to provide for a logical development of junior colleges as institutions and for the extension of community-junior college functions to all residents of the state.

Further review indicated a need to prescribe definitively the role of junior colleges in providing comprehensive service to the constituents of the district. In addition, emphasis was placed upon the relationship between all segments of the higher educational enterprise. Special note was taken of the need for the junior colleges of the state to enter more fully and with greater vigor into the areas of vocational-technical education.

The studies reviewed dealt at length with the importance of financing the operation of the junior colleges. The present tax structure by which local district boards acquire operating funds has been the subject of many studies in the state. Most authorities within the state and those outside experts who have investigated the problem have been critical of the present system and indicate that it has been developed on false assumptions.

The formula for state aid which provides the state's contribution has gone from a $200 dollars per full-time student level in 1961 to a $320 level in 1967. At the same time the definition of a full-time equated student has been liberalized in definition from 30 semester hours to 24 semester hours. The formula is beginning to approximate the levels advocated in recent studies.

In addition to operational financing, the question of state aid for capital outlay was discussed. At present, with the exception of federal funds allocated to the state for building purposes, Missouri does not participate in providing the needed facilities for the development of a state system of junior colleges. The creation of a state program of capital outlay funds is frequently advocated.

The provision of a master plan, clarification of role, tax structure reform, state aid formula improvement, and capital outlay aid from the state all impinge upon the development of criteria for establishment. The relation

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between a master plan and the clarification of role with criteria is most obvious because without a master plan, criteria for establishment are most difficult to develop. Conversely, without the proper criteria, development of a state system of junior colleges is virtually impossible.

There is a direct correlation between the state's financial support and the amount of money that the local district must raise to educate the junior college student. Criterion regarding the financial ability is most accurately estimated in terms of how much must be raised from taxes. Unfortunately, the prescription of a new formula for state aid, for operation and capital outlay, and its acceptance by the legislature are far beyond the scope of this study. Therefore, it will be necessary to develop criterion for local financial ability based upon the existing program and conditions.

Thus the studies reviewed here have provided a background of the concerns and thinking of experts who have examined higher education and, more specifically, the junior college in Missouri.

Literature Related to the Development of Establishment Criteria in General

This section has reviewed historically the study of establishment criteria in order to provide a perspective and knowledge of such criteria. Commencing with T. C. Holy's study of 1929, which recommended a minimum enrollment

of 150 students, and continuing through the compendium written by Morrison and Martorana in 1960; this author was amazed at the consistent, almost universal, subscription to the 200 student minimum enrollment. However, Morrison and Martorana did suggest a minimum enrollment range of 200 to 400 "with 400 being preferred for a comprehensive program."

Only a few of the sources reviewed strayed from the concensus of previous authorities. Among these was August Eberle who proposed that an independent community junior college should have a minimum enrollment of 1,000 students and should optimally enroll 1,500 for true comprehensiveness. Subsequent to the recommendations of this 1953 study, the literature revealed a return to the 200 student enrollment level.

Another stride toward enrollment criteria which encourage comprehensiveness may be found in the 1966 work of James S. Spencer. He recommended the establishment of comprehensive regional junior colleges of 3,000 full-time equivalent students or branch campuses, with limited offerings, of 500 full-time equivalent students.

The means of predicting enrollment in a new junior college were infrequently presented. However, most often used were estimates based upon high school enrollment, total population and the number of high school graduates.

The other criteria receiving the greatest emphasis in the literature was the financial ability of the district. Most frequently this criteria is expressed in terms of a minimum assessed valuation, while other authorities compute financial ability on the districts capacity to raise a set amount of money per student, a percentage of a per capita cost figure or a minimum total budget. Little agreement was evidenced in the establishment of a criterion of a district's financial ability.

Other criteria discussed tended to deal with the procedural manner rather than substantive data necessary to establish a new college. Basically these other criterion dealt with indications of community interest, approval by the voters, approval by a state agency, and relations with existing institutions of higher education.

The review of literature dealing with the general problem of developing establishment criteria provides a series of suggestions which may be incorporated into the recommendations of this study.

The basic cause of concern to this author in his review of the literature was the vagueness of the criteria and the terms so often associated with them. For example, in specifying a minimum enrollment criterion, many authorities do not indicate what constitutes a student. Is the designation made in terms of head count, full-time day students, or some other definition of full-time equated enrollee?

The word "comprehensive" is another case in point. Little, if any, attempt is made to define a comprehensive junior college program of offerings.

It is the aim and responsibility of this study to provide criteria which are definitive, detailed, and defensible. To that end, the short-comings found in the review provide a guide to avoiding the same pitfalls.

Literature Relative to Establishment Criteria for Missouri Public Junior Colleges

In the literature reviewed in this section were found: (a) studies defining the role and function of the junior college in Missouri, and (b) studies suggesting the location of junior colleges both independently and as a part of the total educational reorganization movement in the state (important contributions to developing criteria).

Most significant to this study, however, were the studies of McClain and Norris. Both of these set forth criteria for establishment, McClain suggesting a minimum FTE enrollment of 400 for an entire junior college, while Norris advocated a minimum requirement of 400 FTE enrollment for the single function of the "transfer program." It should be noted that McClain's criteria were based upon the views of authorities in general while Norris' criteria grew out of a detailed analysis of the transfer offerings of Missouri junior colleges.

The review of literature in this section has confirmed the author's contention that he has selected a research problem which has been treated obliquely but has never been studied in the manner in which this study was conducted. The difference lies in the fact that the experiences of "selected" Missouri junior colleges, which are by nature and characteristics like the areas in which future junior college expansion can take place in Missouri, are used to develop criteria for establishment uniquely suited to that state.

CHAPTER III

CONDUCT OF THE STUDY

The major purpose of this study is to examine and analyze the applications of Missouri junior college districts established since the Junior College Enabling Legislation of 1961. Further, an analysis of predictive methods for estimating potential enrollment and district financial capabilities is included as an integral and extremely necessary compliment of qualification for approval for establishment.

The desired outcome, of the elements of the study mentioned above, is the development of a detailed format which may be used in future junior college establishment in Missouri. Therefore, six existing districts which are by nature and characteristics most like the areas of the state not currently served by a junior college were selected. Two districts, St. Louis-St. Louis County Junior College District and Metropolitan Kansas City Junior College District, were not included in the detailed analysis as they represent enrollment potentials and financial support bases of greater magnitude than any district which might be established in the foreseeable future.

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Two other operating districts, Moberly and Trenton Junior Colleges, were formed long before the Enabling Act of 1961 and are constituted of single school districts. Since no applications were available for these districts and since the formation of similar single school district junior college organizations is not receiving the approval of the Missouri State Department of Education, they were not included in the analyses.

Sample

The six junior college districts included among the "selected" junior colleges were: Newton-MacDonald Counties Junior College District (Crowder College); Jefferson County Junior College District (Jefferson College); Mineral Area Junior College District (Mineral Area Junior College); Jasper County Junior College District (Missouri Southern College); Missouri Western Junior College District (Missouri Western College); and Three Rivers Junior College District (Three Rivers Junior College).

These districts represent areas ranging from a single county to four counties in area, and also a variety of communities similar to areas not yet served by junior college districts. Jefferson College serves a county which is rapidly developing as a suburban area contiguous to St. Louis and St. Louis County. Mineral Area serves a group of relatively small (under 10,000 population) but numerous communities which are supported by the same

economic base, mining. Missouri Southern and Missouri Western provide junior college programs to areas surrounding two relatively large cities (75,000 to 100,000 population). Crowder and Three Rivers serve agricultural areas of two and four counties, respectively. Both have a single community of more than 10,000 population as the hub of the district.

Table 3 presents some pertinent factors which indicate the relative age of these institutions as they presently exist. Three of these districts are expansions of single school district, limited function institutions.

TABLE 3.--"Selected" public junior college districts of Missouri.[1]

Junior College	Location	Counties Served	Year Established
Crowder College	Neosho	MacDonald Newton	1963
Mineral Area Junior College	Flat River	St. Francois Madison	1965 (1922)*
Jefferson College	Hillsboro	Jefferson	1963
Missouri Western College	St. Joseph	Buchanan Andrew	1965 (1915)*
Missouri Southern College	Joplin	Jasper	1964 (1937)*
Three Rivers Junior College	Poplar Bluff	Butler Carter Ripley Wayne	1966

[1]Source: Missouri State Department of Education.

*Date of establishment of original single public school district institution.

The three expansion districts are: Mineral Area, formerly Flat River Junior College; Missouri Western, formerly St. Joseph Junior College; and Missouri Southern, formerly Joplin Junior College. It is felt by this author, that the inclusion of these expansion institutions does not in any way weaken this study in light of its objective of eliciting factors influential in future junior college districts. The Trenton and Moberly Junior Colleges are studying the possible expansion of their districts to accommodate a portion of the unserved area of the state. Thus, the experiences of the "selected" junior college may aid in the development of these future expansions.

Sources of Data

This research has been conducted in conjunction with a larger study aimed at the development of a state master plan for Missouri Junior Colleges. This writer has been employed by the Missouri Commission on Higher Education as a member of the research team, and in that capacity has visited all of the public junior colleges in the state, as well as all of the four-year institutions. Much of the information presented for analysis has been gained through these visits and the interviews conducted in the course of these visits.

In addition to the institutional visits mentioned above, the author has interviewed, on several occasions and at great length, personnel of the Department of Junior

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Colleges, Missouri State Department of Education and personnel from the Missouri Commission on Higher Education. Both of these agencies have made available information and data utilized in the analyses which constitute this study.

A third source of information, particularly that pertaining to establishment criteria of other states, was the information file for the major "Master Plan" study which was developed by the study team. This provided most of the data on prediction methodologies which is discussed in Chapter V.

The fourth, and most important source of data, was the copies of the "applications for establishment" which were provided by each of the junior college districts.

Methodology

This study is comprised of three separate sub-studies:

1. Analysis of applications,
2. Analysis of potential enrollment, and
3. Analysis of financial support.

Each of these will be discussed individually in terms of the methodology employed.

Analysis of Applications

Each of the junior college districts which has been formed since 1961 was asked to provide a copy of their application for establishment. All six of the "selected"

junior colleges submitted theirs, and in addition, the applications of Kansas City, St. Louis, Sedalia, and Franklin County districts were received. (The last two districts are not yet in operation.)

The review of the literature provided considerable information on the "criteria for establishment" as they are applied nation-wide. Most pertinent to this research, however, was a publication by the American Association of Junior Colleges which presented twelve items of information important to providing evidence of need for the establishment of a community-junior college.[1] These twelve items were used as the basis for the application analysis.

The applications of the "selected" junior colleges were carefully studied and each statement presented in support of establishing the new or expanded district was extracted. The statements were then categorized in terms of the twelve items discussed above.

Each statement was then carefully examined to determine whether it was a statement of fact, supported by documentation, detailed data, or evidence of its derivation. Those statements which satisfied the author on this basis were designated as "S" meaning substantiated. Other statements which were not supported in this manner were noted a "U" or unsubstantiated.

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[1]Commission on Legislation of the American Association of Junior Colleges, Principles of Legislative Action for Community Junior Colleges (Washington, D. C.: American Association of Junior Colleges, 1962), p. 4.

The analysis presented in Chapter IV discusses the evidence presented for each institution and the extent of substantiation or unsubstantiation. The twelve categories are then discussed in detail, presenting a synopsis of: what was reported, example of presentations, and suggestions for strengthening the evidential statements for each category. The suggestions presented in Chapter IV are transformed into a suggested format for future applications in the recommendations of Chapter VII.

Analysis of Potential Enrollment: Chapter V

The 1961 Public Junior College Enabling Legislation in Missouri specified that one criterion for the establishment of a junior college district is "adequate potential enrollment." In the application analysis of Chapter IV, Item 4 deals with the projection of potential community-junior college enrollment in terms of the evidence presented, however, the detailed analysis based upon the experiences of the "selected" junior college district is treated in Chapter V.

The review of the literature revealed that four factors are most commonly used and accepted as predictors of enrollment potential. These are:

1. Total population,
2. Total high school enrollment,
3. Total number of high school graduates, and
4. Total population of a particular age level in the junior college district.

Further review of field studies and other related research in the establishment of community-junior colleges produced examples of the methodology for applying the various factors to estimating enrollment potential.

Each of the methodologies employed for the various factors is summarized and the assumptions basic to the application of the method are extracted. Comparable data, to that employed in the examples, are presented for the "selected" junior colleges of Missouri. The Missouri data is then analyzed in descriptive statistical terms, mean and median,[2] portraying measures of central tendencies. The sum of the factor input for the five junior college districts which have been in operation at least two years are then computed and divided by the total FTE enrollment for the five institutions to determine an aggregate average per FTE enrollee. These statistical derivations are then compared to the assumptions of the methodology discussed above.

In order to further analyze the appropriateness of each factor to Missouri junior college development, the relationship between enrollment size and the input factor are tested through nonparametric statistical techniques. These techniques were chosen because of the small sample size (N=5 or 6) of the "selected" junior college districts. Siegel states:

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[2]Mean is represented by $\bar{X}$, while median is represented by C_{50}.

> If sample sizes as small as N=7 are used, there is no alternative to using a nonparametric statistical test unless the nature of the population is known exactly.[3]

Based upon this premise, it was decided that a rank order correlation was most appropriate to accomplish the desired results.

The author was faced with a choice between the use of Spearman's Rank Order Correlation or Kendall's Tau. According to Borg, Kendall's Tau "has a more normal sampling distribution than Rho (Spearman's Rank Order Correlation) for numbers under 10."[4] He also suggests that Kendall's Tau yields lower correlation coefficients than Rho when computed on the same data. Thus more conservative conclusions will be drawn from the data analyzed. Siegel, in a discussion of the difference between Rho and Tau, proposes that the power of these tests is equal, having efficiency of 91 per cent when compared to the parametric Pearson Product-moment Correlation.[5] Downie and Heath substantiate the same position.[6]

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[3]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1965), p. 32.

[4]Walter R. Borg, Educational Research: An Introduction (New York: David McKay Company, Inc., 1963), p. 152.

[5]Siegel, op. cit., p. 223.

[6]N. M. Downie and R. W. Heath, Basic Statistical Methods (New York: Harper & Row, Publisher, Second Edition, 1965), p. 209.

Kendall's (Tau) Rank Order Correlations, are computed utilizing the four factors of input in relationship to FTE enrollment. These correlations are computed on an N=6 basis, including all the "selected" junior colleges, and on an N=5 basis, excluding Three Rivers which is in its first year of operation.

One method of estimating potential enrollment consists of four steps involving five variables:

1. Number of high school graduates
2. First-time resident enrollees
3. Total first-time enrollees
4. Head count enrollment, and
5. FTE enrollment.

The assumptions explicit in the method are extracted and compared to like data on the "selected" districts. The derivation of correlations for all five variables, however, can not be accomplished through Kendall's Tau. Therefore, Kendall's Coefficient of Concordance: W, a test appropriate to determine the relationship among three or more sets of ranks, is computed.[7]

Finally, in Chapter V, an influence commonly associated with enrollment size is analyzed. That concomitant, program comprehensiveness, is treated in the same descriptive statistical manner as described previously and

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[7]Siegel, op. cit., pp. 229-238.

was tested for its correlations with FTE enrollment by application of Kendall's Tau.

The conclusions drawn in Chapter V are also transformed into suggestions in Chapter VII and included in the format for future applications.

Analysis of Financial Support: Chapter VI

Another criterion specified in the 1961 Enabling Act is adequate assessed valuation to support a junior college. Therefore, an analysis is included which examines the sources of revenue, and the categories of expenditures, to provide some guidelines for future junior college development in Missouri. The simple observation of gross assessed valuation for a district seems to provide a limited judgment of financial ability.

Three bases of comparison employed in the first analysis, Revenue Sources, are:

1. FTE enrollment
2. Assessed valuation
3. Assessed valuation per FTE enrollee.

The factors considered in relation to the three bases are:

1. Revenue Source Index which includes the percentage of total revenue derived from:
    a. State and local taxes (this is primarily the local property tax and a state administered tax on utilities located within the junior college district. The same tax levy

is applied to both local property and the utilities.)

b. Student tuition or maintenance fees.

c. State aid and appropriations.

d. All other sources of income.

2. Tax levy:

a. Authorized by state law.

b. Actual.

3. Rate of Student Fees:

a. Resident enrollees entitled to state aid.

b. Resident enrollees not entitled to state aid.

c. Non-resident enrollees entitled to state aid.

d. Non-resident enrollees not entitled to state aid.

Closeness of relationship between the three bases and four factors and their relationship within the two groups were tested by the use of Kendall's Rank Order Correlation (Kendall's Tau) as described previously in the discussion of Chapter V.

A second analysis focuses upon the operational expenditures of the "selected" junior college districts. It introduces two new data for consideration:

1. Total (operational) expenditures,

2. Per capita (operational) expenditure.

The second of these factors is used in computing the degree of relationship with:

1. The Program Comprehensiveness Index
2. The Revenue Source Index
3. FTE Enrollment

Kendall's Tau Correlation Coefficients are computed for each of the relationships.

Limitations of Chapter VI.--The research on financial support is focussed upon a study of current conditions rather than a longitudinal study envisioned in the original proposal for this study. Interviews with the administrators of the institutions, and at the state level, indicated that financial data from previous years was not always comparable due to differences in accounting systems. (Cash basis, accrual basis or modifications of these two systems were in use, while reporting was required on a cash basis. The 1966-68 information has been translated by the State Department of Education into comparable data.).

Summary

This study is concerned with the analysis of applications submitted for establishment of the six "selected" junior college districts, the analysis of methodologies for estimating potential enrollment for proposed districts based upon the experience of existing junior colleges, and the analysis of financial support necessary for proposed districts as indicated by the existing districts' experience. The results of the findings of the three analyses are drawn together in a format of the type of information

that should be developed by sponsors of a proposed junior college district in Missouri to provide evidence of: (a) the need for a junior college in the area; (b) an adequate potential enrollment; and (c) adequate financial support capabilities; as required by law. The format serves as the major consideration of Chapter VII as it embodies both the conclusions drawn from this study, and recommendations based upon these conclusions.

CHAPTER IV

ANALYSIS OF APPLICATIONS FOR APPROVAL TO CONDUCT ELECTIONS FOR ESTABLISHMENT OF PUBLIC JUNIOR COLLEGES IN MISSOURI

Introduction

In this chapter, the evidence provided by the applicant district to the State Board of Education is analyzed in several ways. "What evidence was submitted as justification of the need for the establishment of the junior college district?"; "How was this evidence presented?"; and "Was the evidence substantiated in the presentation?"

The analysis in subsequent chapters will consider the projected potential enrollments and financial capabilities (in terms of the assessed valuation of taxable, tangible property) within the proposals for establishing the "selected" colleges as they compare to actual enrollment and financial capability experienced by these districts since they began operation.

The applications for establishment were presented in a variety of forms and organizations, and differed widely in the sophistication of the material presented. All of the applications of the "selected" districts were the result of the work of local survey committees, as were

the applications of the two districts not yet in operation. All of the above utilized in varying degrees, the consultant services of the Director of Junior Colleges of the State Department of Education or other junior college administrators within the state.

The districts at St. Louis and Kansas City, however, employed professional consultants to direct the studies in conjunction with local survey committees. St. Louis retained Dr. Edward B. Shils, University of Pennsylvania as director,[1] while Kansas City employed Dr. Raymond J. Young, University of Michigan, as director and Dr. S. V. Martorana, United States Office of Education, as consultant.[2]

Background

In compliance with its charge from the legislature in the Enabling Act of 1961, the State Board of Education established regulations for organization of proposed districts which were:

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[1]Committee on Higher Educational Needs of Metropolitan St. Louis, Higher Education and the Future of Youth in the Greater St. Louis Educational Area, A report to the Governor's Committee on Education Beyond the High School in Missouri and to the Citizens of the Greater St. Louis Educational Area (St. Louis: Committee on Higher Educational Needs of Metropolitan St. Louis, 1960), p. 3.

[2]Committee for the Junior College District of Metropolitan Kansas City, Survey for Establishing the Junior College District of Metropolitan Kansas City (Kansas City, Mo.: The Committee for the Junior College District of Metropolitan Kansas City, 1964), p. 7.

1. A survey of the proposed district, made prior to the submission of a petition to the State Board of Education, shall accompany the petition;
2. The results of the survey shall be used by the State Board of Education in reviewing applications for approval, and in establishing priorities for elections;
3. The survey must provide evidence of:
   a. Need for a junior college because of the lack of post-high school opportunities;
   b. A willingness and desire to provide a program of services suitable to the abilities and needs of junior college students;
   c. Sufficient potential enrollment to justify the establishment and operation of a junior college;
   d. Financial ability to provide a satisfactory site, adequate and desirable plant facilities, suitable equipment for the program to be offered and a competent and well trained administrative and instructional staff;
4. The petition for the formation of a junior college district, together with the survey results and other supporting information, shall be submitted to the State Board of Education at least 90 days prior to the annual school election in April.[3]

The regulations cited above provide a general guide to the survey's purpose. The State Board of Education established standards specifically designed to provide flexibility and encouragement to the development of junior college districts.

Standards

Due to the great variance in population density, assessed valuation and other pertinent factors in the various school districts throughout the State, the approval of petitions for the formation of junior college districts shall be based on standards that permit some degree of flexibility. In general, however, the junior college district shall:

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[3]Missouri State Department of Education, Principles, Regulations and Standards for the Organization and Accreditation of Public Junior Colleges in Missouri (Jefferson City: Missouri State Department of Education, 1962), p. 3.

1. Be located so as to fit logically into a statewide system of publicly supported colleges;
2. Be contiguous and compact in area;
3. Include one public school district or two or more whole contiguous school districts;
4. Include a total population large enough to justify a two-year college;
5. Graduate from the component high school district a sufficient number of pupils each year to maintain adequate enrollment in the junior college;
6. Include a territory of such size that resident enrollees can commute from home to school in a reasonable length of time;
7. Encompass enough area to provide a tax base on which a reasonable levy, together with state aid and other available funds will support an accredited junior college.[4]

A more specific interpretation of these standards, e.g., necessary enrollment size or necessary assessed valuation, has been communicated through the Director of Junior Colleges as he works with representatives of the prospective district. They are not written in any official or documentary form. The current requirements are an enrollment of 400 full-time equated students and an assessed valuation of $60,000,000 or more.[5]

Studies or surveys of the type required in Missouri, are advocated by most writers in the community-junior college field. Fretwell in his work on establishing a junior college states, "The initial step is one of

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[4] Ibid., p. 4.

[5] Information gathered in an interview with Mr. James Browning, Director of Public Junior Colleges, State Department of Education.

assaying the nature and extent of post-high school needs in the community in question."[6] Morrison and Witherspoon suggest, ". . . the most definitive way to ascertain the likelihood of establishing a junior college is to assay community needs, desires, and capability of supporting a junior college."[7] They then go on to state that the study may be locally or state conducted and that it should "determine the need for a new institution of post-high school grade, probable student support, community interest, and ability and willingness to support a junior college financially."[8]

Hillway in his book advocates that a survey should: define the geographic area; involve a survey committee "large enough to represent public opinion in the entire area but small enough to form an effective working group;" be adequately financed; organize the facts; poll public opinion; establish the legality of the proposed district; study the availability of teachers; investigate other community colleges; choose the location; and "present all

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[6]Elbert K. Fretwell, Jr., "Establishing a Junior College," The Public Junior College, Chapter XIV, Fifty-fifth Yearbook of the National Society for the Study of Education (Chicago: University of Chicago Press, 1956), p. 292.

[7]D. G. Morrison and Clinette F. Witherspoon, Procedures for the Establishment of Public 2-Year Colleges (Washington, D. C.: U. S. Government Printing Office, 1966), p. 13.

[8]Ibid.

pertinent facts, both favorable and unfavorable, to the public and secure public response."[9]

The most succinct summary of the above suggestions appears, to the author, to be embodied in the recommended second principle of "Principles for Legislative Action" prepared by the Commission on Legislation of the American Association of Junior Colleges.

Although Principle II appears in the Review of Literature, it is presented again for the convenience of the reader. Principle II states:

> The local survey report will contain the following:
> 1. Socio-economic and population descriptions of the proposed district;
> 2. Maps showing topography, road systems, population centers, and main commuting routes to a proposed campus center;
> 3. Follow-up studies of high school students in previous years;
> 4. Prospective community junior college students;
> 5. Programs needed in the community junior college;
> 6. Post-high school programs now in operation in the area to be served;
> 7. Programs of high school level in the area;
> 8. Facilities and/or sites available which may be used either temporarily or permanently by the college;
> 9. Guidance facilities now available;
> 10. Teaching staff available;
> 11. Community attitude--evidence of community support, hostility, or indifference; and
> 12. Extent of local resources for financing the community junior college.[10]

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[9]Tyrus Hillway, The American Two-Year College (New York: Harper & Brothers, Publishers, 1958), pp. 233-38.

[10]Commission on Legislation of the American Association of Junior Colleges, Principles of Legislative Action for Community Junior Colleges (Washington, D. C.: American Association of Junior Colleges, 1962), p. 4.

These twelve items are used as a construct within which the applications of the existing junior colleges are analyzed. The fourth and twelfth items, "prospective community-junior college students" and "extent of local resources for financing the community-junior college," will be briefly analyzed in this section, but will serve as the major concern for Chapters V and VI, respectively.

Application Analysis

The application analysis is presented in three parts: (a) the "selected" junior colleges; (b) St. Louis and Kansas City Junior College Districts; and (c) recently formed districts not yet in operation.

The "Selected" Junior College Districts

The applications of six "selected" junior college districts varied greatly in the extent to which they fulfilled the twelve suggested items of evidence (see Table 4). Information was provided by all districts in three categories:

2. Maps showing topography, road systems, population centers, and main commuting routes to a proposed campus center.
4. Prospective community-junior college students.
12. Extent of local resources for financing the community-junior college.

TABLE 4.--An analysis of the applications for establishment of "selected" junior college districts in Missouri.

	Item 1	Item 2*	Item 4	Item 5	Item 6	Item 8	Item 11	Item 12	Date	Length	Form of Appl.	S**	U**
Crowder	S-1 U-3	S-1 U-1	S-1 U-2	U-2	S-1 U-3	U-1	S-2 U-1	U-1	4/1962	14 pgs.	Typed	5	13
Jefferson	S-4 U-2	S-2	S-4				S-3	S-1	10/1962	28 pgs.	Typed	14	2
Mineral Area			S-2	U-2				S-2	9/1964	9 pgs.	Typed	4	2
Missouri Southern	U-1	S-1 U-1	S-1 U-2		U-1		S-1 U-1	U-1	1/1964	17 pgs.	Typed	3	7
Missouri Western	U-2	S-2 U-2	S-2		U-1	U-1	S-2 U-1	S-1	10/1964	20 pgs.	Typed	7	6
Three Rivers	U-3	S-1 U-1	S-3 U-3	U-3	U-2	U-1	S-2 U-1	S-1	12/1965	19 pgs.	Printed	7	13
Total by Item	S-5 U-11	S-7 U-5	S-13 U-7	U-7	S-1 U-7	U-3	S-10 U-4	S-5 U-2					

*Maps were included with each application. The tally in this column represents the nature of amplifying statements.
**S = Substantiated; U = Unsubstantiated.

Item 1 = Socio-economic and population descriptions of the proposed district; Item 2 = Maps showing topography, road systems, population centers, and main commuting routes to a proposed campus; Item 4 = Prospective community college students; Item 5 = Programs needed in the community junior college; Item 6 = Post-high school programs now in operation in the area to be served; Item 8 = Facilities and/or sites available which may be used either temporarily or permanently by the college; Item 11 = Community attitudes--evidence of community support, hostility, or indifference; Item 12 = Extent of local resources for financing the community college.

(The last two closely approximate two of the legislative criteria.)

Two other items were included on all applications except that of the Mineral Area Junior College District. Those were:

1. Socio-economic and population descriptions of the proposed district;

11. Community attitudes--evidence of community support, hostility or indifference.

Four of the items of evidence were not presented in the applications of any of the selected junior college districts:

3. Follow-up studies of high school students in previous years;

7. Programs of high school level in the area;

9. Guidance facilities now available;

10. Teaching staff available.

A quantitative view as presented above and in Table 4 can in no way present the true picture of what was found as evidence or the manner in which it was presented. Several of the documents demonstrated at least a modicum of care and thought in their organization and presentation, while others lacked cohesiveness or structure, and appeared to have been hastily conceived and prepared.

As stated in Chapter I and Chapter III, it is the purpose of this analysis to examine the extent to which

statements of evidence were substantiated through documentation. This proved to be the most disappointing phase of the analysis because of the lack of substantiating data in the application.

The procedure used in evaluating the substantiation of evidence consisted of searching the documents for statements relative to and supportive of each of the twelve items proposed in Principle II. (A certain amount of subjective judgment and liberality of assignment was required to accomplish this end.) After the statement had been categorized, each was investigated to determine the source or basis upon which the statement was made. Those for which a source or basis could be identified and for which the supporting evidence was included with the application were those declared substantiated; all others were designated as unsubstantiated. Typically unsubstantiated statements were expressed as a "feeling" or an estimate.

For example, the Missouri Southern application contains the following unsubstantiated statement:

> Interest in the formation of a county-wide junior college seems to be unusually high and is backed by outstanding citizens and organizations of the proposed area.[11]

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[11]Survey Committee for Establishing a Junior College District of Jasper County, Missouri, Survey for Establishing the Junior College District of Jasper County, Missouri (Joplin, Mo.: Survey Committee for Establishing a Junior College District of Jasper County, Missouri, 1964), p. 7.

Verification or documentation of the support mentioned above was not included anywhere in the application.

The Jefferson application contained a list of those individuals present at the meeting authorizing the survey committee to initiate the establishment procedure. The list designated the individuals position and the community he represented.[12] This was declared to be substantiated.

Table 4 indicates the number of substantiated and unsubstantiated statements presented by each institution for each item. The Jefferson application documented 87.5 per cent of the statements while the Crowder application documented 27.8 per cent of their statements. Item 11 (community attitudes) had the highest frequency of substantiation (71.4%) while Item 5 (programs needed) had no substantiation for any of the seven statements made in the applications.

In order to provide a clearer view of what has been presented, what has been substantiated, and what might be done to improve the presentations, each of the twelve items are discussed in detail.

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[12]Committee for Junior College of Jefferson County, Missouri, Survey for the Establishment of the Junior College of Jefferson County (Hillsboro, Mo.: The Committee for Junior College of Jefferson County, Missouri, 1962), pp. 7-8.

Item I: Socio-economic and Population Descriptions of the Proposed District

A. What was reported?--Five of the junior college proposals included at least one statement of the population, either a present estimate or an estimate based upon the 1960 census or a statement of socio-economic condition. Three made statements about the projected developments in real estate, business and industry, however, none of these statements were documented in any way nor were they clearly tied to the need for a junior college. Four of the applications did suggest that a junior college would make the community more appealing to business and industry. Five included a statement alluding to the agricultural base of the economy of the area. Two included statements relative to the types of communities in the proposed districts, however, these statements tended to be very brief and very general.

B. Example of presentations (see Appendix A).--The growth in population for the Jefferson Junior College District was well illustrated and documented by the provision of:

1. A table of the population trends including
    a. Population prior to 1900 (1850-1890)
    b. Population and per cent of change 1900 to 1960.
    c. Population of minor civil divisions 1910 to 1960.

(1) Townships

(2) Municipalities[13]

2. A table prepared by the Union Electric Company on the "Number of Electric Customers--End of Year" including:
   a. Actual--1956 to 1963
   b. Forecast--1963 to 1968[14]
3. A table of "Projected Enumeration and Population" including:
   a. Actual enumeration 1960 to 1963
   b. A derived population factor
   c. Projected population figures[15]
4. A table of "Population by Present School Districts." (Estimate based upon 1960 census figure with computed increase at ratio of school enumeration increase.)[16]
5. A table of "Trends in School Enumeration: Ages 6 through 19" presented:
   a. By school district
   b. From 1950 to 1962[17]

Another example of documentation was found in the Newton-MacDonald County application where population projections for the two counties prepared by a consulting

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[13] Ibid., p. 26. [14] Ibid., p. 27. [15] Ibid., p. 28.

[16] Ibid., p. 14. [17] Ibid., p. 17.

engineering firm and Hare and Hare, City Planner, was presented in graph form.[18]

Other examples of evidence, considered by this researcher to be "unsubstantiated" were statements such as the following:

> In parts of the proposed Junior College District, as in many areas of rural Missouri, the total population has decreased. However, in recent years the holding power of the senior high schools has increased. Therefore, there is actually a greater immediate potential than there has been in previous years.[19]

Other evidence submitted included lists of business firms, or in some cases new firms, which are located in the district. No indication was provided of the health and stability of business or employment climate in the area. It is not possible to determine from a list of new businesses whether some of the new businesses merely replaced other firms which have moved elsewhere.

There seemed to be very little evidence of the social, economic, educational or cultural conditions or aspirations of the people of the proposed district.

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[18]Survey Committee of the Proposed Junior College District of Newton and MacDonald Counties, Missouri, Survey for Proposed Junior College District of Newton and MacDonald Counties, Missouri (Neosho, Mo.: The Survey Committee of the Proposed Junior College District of Newton and MacDonald Counties, Mo., 1962), p. 7.

[19]Survey Committee of the Proposed Three Rivers Junior College District of Poplar Bluff, Mo., Survey for Establishing the Three Rivers Junior College District of Poplar Bluff, Missouri (Poplar Bluff, Mo.: Survey Committee of the Proposed Three Rivers Junior College District of Poplar Bluff, Mo., 1965), p. 7.

C. Suggestions for presentation.--In portraying socio-economic and population factors relative to the need for a junior college it seems appropriate that the following be included:

1. An historical presentation of population trends in the proposed districts.
2. Population projections from several sources including the methodology or rationale of the projection.
3. A portrait of the make-up of the population relative to age, economic conditions, educational conditions, employment, rural-urban residence, stability of residence, and other similar factors.
4. Business, and industry growth trends presented historically, including future projections.
5. Any other factors that depict the realities of living in the proposed district.

Item 2: Maps Showing Topography, Road Systems, Population Centers and Main Commuting Routes to a Proposed Campus

A. What was presented?--All of the applications included maps, however, the information that could be gained from these varied greatly. In most cases maps designed for other purposes were used, thus providing too much detail for ease of interpretation or, in one case, providing too little.

The map information was amplified well in five of the applications through narrative descriptions of:

1. The legal description of the district,
2. The school districts to be included,
3. The accessibility to potential students,
4. The area of the district.

B. Example of presentations (see Appendix B).--The maps presented information in varying degrees. For example the Jefferson Junior College application map included:

1. Location of constituent school districts,
2. Location of municipalities,
3. Road systems,
4. Location of the industries of the area.

This was a "Road Map (of) Union Electric Territory in Jefferson County" and included only the proposed junior college district.[20]

The Mineral Area application map included:

1. Location of all municipalities,
2. Road systems,
3. All or part of six counties.

However, the boundary of the proposed district does not appear on the map nor is any mention made in the narrative.[21]

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[20]Committee for Jefferson County, op. cit., p. 24.

[21]Survey Committee for Establishment of Mineral Area Junior College, Junior College Summary Report (Flat River, Mo.: Survey Committee for Establishment of Mineral Area Junior College, 1964), p. 2.

In many of the applications narrative reports are used to accomplish the purposes of Item 2. The applications for Jefferson and Missouri Western included a very detailed legal description of the type found in deeds and abstracts, while Three Rivers used a list of the school districts to designate the legal area.

The application for Missouri Western used the following to clarify commuting routes.

> The entire area included in the proposed junior college district is either on or within a short distance of excellent highways. Interstate highway No. 29 and U. S. Highway No. 71 extend through the entire district from north to south. U. S. Highways, No.'s 36, 169 and 59 provide rapid and safe transportation throughout the entire area. . . . All of the communities of any size within the district are connected by excellent highways making commuting possible within a few minutes.[22]

No mention or map depiction was made of topographical influences in any of the proposed areas.

C. Suggestions for presentations.--The proposal for establishing a new junior college district would seem to merit the production of maps appropriately suited to the task. The depiction should include:

1. A basic map indicating district's boundaries and approximate location of:
   a. the geographic center of the proposed district;

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[22]Committee for Missouri Western Junior College District, Survey for Establishing Missouri Western Junior College District (St. Joseph, Mo.: Committee for Missouri Western Junior College, 1964), p. 7.

b. the population center of the proposed district;

c. the communities within the proposed district.

2. Through the use of an overlay or on a separate map, the road network should be portrayed as it relates to the three elements listed on the basic map.

3. A map depicting the location of business and industries employing more than 50 individuals should be provided.

4. A map showing the location of all existing institutions of education at:

   a. the secondary level;

   b. post-secondary level.

5. A map including areas within a 50 mile radius of the boundaries of the proposed district indicating all institutions of higher education located therein and indicating areas which may be included in the proposed district through later annexation (e.g., contiguous areas not currently served by a public junior college).

In addition to the map discussed above it is suggested that narrative presentations of the following items be included:

1. A general description of the district area:
   a. size
   b. topographical influences.
2. The legal description of the district.
3. A list of constituent school districts by county.
4. The accessibility of the proposed college to potential students.

Item 3. Follow-up Studies of High School Students in Previous Years

A. What was presented?--None of the applications of the "selected" junior colleges gave any indication that a follow-up study of high school graduates or "drop-outs" had been conducted. Several of the applications provided estimates of the number of students who continued on to college.

B. Example of the presentations.--One application indicated an approximate number of students who had gone on to college, but then cast doubt on this approximation by stating:

> Our source of information for this question was principally from High School Superintendents of the two counties. Of the 13 Superintendents, 7 are either new this year or were new last year and consequently did not have information on previous graduates if not kept by the school.[23]

[23] Survey Committee of Newton-MacDonald Counties, op. cit., p. 8.

This information was categorized as a contributing influence to Item 4.

C. Suggestions for presentation.--It is considered appropriate and essential by some professional consultants that high school graduates be surveyed through a follow-up study to:

1. Determine the post-high school educational and employment experience of individuals of the proposed district;
2. Assess the value of the high school training in preparation for their post-high school experiences;
3. Survey their opinion on the need for post-high school educational opportunity in their home community in light of their experiences.

Dr. Raymond Young,[24] along with other consultants, advocates surveying two graduating classes, one whose members could be expected to be engaged in post-high school education or entry occupation positions (two to three years after graduation) and another class whose members could reasonably be expected to have completed initial post-high school education and are engaged in "career" level occupations (five to seven years after high school).

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[24]Raymond J. Young, Garold Dyke, and R. Ernest Dear, Shiawassee-Clinton Area Vocational-Technical Education Study (Ann Arbor, Mich.,: University of Michigan, 1966), p. 51.

Item 4. Prospective Community Junior College Students

A. What was presented?--Although this item is discussed in detail in Chapter V, it is important at this time to note that all applications contained statements relative to the prediction of the potential enrollment. In terms of actual projection, five of the applications suggested an enrollment either initial (175 to 375) or potential (600 to 2,000). However, no clearly formulated projective techniques were included in the evidence.

B. Example of presentations (see Appendix C).--Basically, all the applications provided documentation in the form of raw data upon which projections could have been made but the application of a formula never appeared. Types of substantiated data presented included:

1. Enrollment of constituent school districts:
   a. by grade or by K-8, 9-12 categories;
   b. historical trends and projections;
   c. biennial enumerations count.
2. College attendance in numbers or per cent, and
3. Student aspiration survey results.

C. Suggestions for presentation.--This material will be detailed in the fifth chapter. However, it is advocated that a survey of parents' interest and aspirations for their children and themselves be conducted to aid in projecting enrollment.

Item 5: Programs Needed in the Junior College

A. What was presented? In the applications reviewed no substantive evidence of program needs was submitted. None of the applications of the "selected" junior college districts contained technical-vocational need surveys, community service need surveys or any other instrument for determining program.

Several applications listed the commonly accepted functions of a community junior college. Most suggested that a transfer program, tuition free or at minimal cost, would encourage more students to continue, while others suggested that allowing the students to stay at home for an additional two-year maturation period would better suit them to the rigors of four-year college life.

B. Example of presentations.--One junior college presented an outline for program expansion which read:

Junior College Program

Present
- (1) Two years of academic college education
- (2) Terminal courses in commercial education

Expanded program possible in Area Junior College in addition to present program
- (1) Semi-Professional
  - Example: (a) Engineering technicans
    (b) Medical assistants
- (2) Technical
  - Example: (a) Electronics
    (b) Data Processing
- (3) Vocational
  - Example: (a) Drafting
    (b) Small business management
    (c) Junior executive for business and industry

(4) Adult
Example: (a) Short term special courses to train for advancement
(b) Retraining courses for employed due to technical advancement and industrial mobility.[25]

C. Suggestions for presentation.--In order to insure that the community junior college serves the unique needs of the area, it seems that the follow-up studies (mentioned in Item 3), the student aspiration, parental interest and aspiration surveys (mentioned in Item 4), and vocational-technical need studies of the type conducted in Jasper County by Harlan Heglar,[26] for Missouri Southern Junior College after that institution had become an independent junior college, should be prerequisites to approval. The combination of the several studies is advocated in order to determine the patterns of mobility experienced by young people of the community and to gear their education and training to meet the needs of the individual and the labor market's demands in the community or elsewhere.

Item 6: Post-high School Programs Now in the Area to Be Served

A. What was presented?--None of the "selected" districts were formed in areas where other institutions

[25]Survey Committee of Mineral Area, op. cit., p. 5.

[26]Harlan L. Heglar, "A Survey of Business and Industry Needs for Vocational-Technical Programs in the Jasper County Junior College" (unpublished doctoral dissertation, Michigan State University, 1966).

of higher education, either private or public, were in operation. However, adult course offerings in the public schools, area vocational schools, and proprietary schools (e.g., business colleges, beauty schools) were not indicated in any of the applications. Most of the applications did contain a narrative description of the proximity of the district to other institutions of higher education, private and public, in Missouri (and in other states, for districts situated along the state border).

B. Example of presentation.--The statement in the Three River's Junior College application is quite typical.

> Location in Relation to Existing Colleges
> The potential college students of the Poplar Bluff School District or the students from the surrounding area within Butler County are at a disadvantage in securing a college education because of the distance to existing public institutions of higher education. The distance from Poplar Bluff to Cape Girardeau (Southeast Missouri State College) is 79 miles; the distance . . . to Springfield (Southwest Missouri State College) is 206 miles; the distance . . . to Columbia (University of Missouri) is 250 miles; the distance . . . to Jonesboro, Arkansas (Arkansas State College) is 85 miles. . . .[27]

C. Suggestions for presentation.--The presence of other post-high school programs within or adjacent to the proposed area should be depicted on a map as described in Item 2, suggestion 5. A narrative description should enumerate the programs offered at these institutions

[27]Survey Committee for Three Rivers Junior College, op. cit., p. 14.

and portray the nature of the institutions. The practice of describing the proximity of other institutions of higher education outside the map area, as in the example above, should be continued.

Item 7: Programs of High School Level in the Area

A. What was presented?--None of the applications discussed high school programs or the relationship of area high schools to the proposed junior college. One application did state that it was "felt that the high schools would be upgraded in having a common denominator in an area junior college."[28]

B. Example of presentation.--None.

C. Suggestions for presentation.--An examination of the programs of the high schools in the proposed district will indicate the possible variance of experience and training of the high school graduates who will make up the vast majority of the enrollment in the new junior college. Young[29] presents an analysis of vocational education courses offered in constituent high schools of a proposed district in Michigan.

[28]Survey Committee of Newton-MacDonald Counties, op. cit., p. 10.

[29]Young, Dyke, and Dear, op. cit., pp. 90-106.

Item 8: Facilities and/or Sites Available Which May Be Used Either Temporarily or Permanently by the College

A. What was presented?--Three of the districts, in this group of "selected" junior colleges, were applying for a change in status to that of an independent junior college district. One of these three made specific mention of the availability of the present facilities for use of the new expanded district. Although not mentioned in the applications, the other two have utilized the facilities which had housed them during their association with K-12 districts. The applications of Crowder and Three Rivers included indications of available facilities.

B. Example of presentations.--Missouri Western's application contained a statement which indicated:

> The St. Joseph Board of Education has offered to lease the physical plant of that institution to the new junior college district, if created, at $1.00 per year.[30]

The application of the Newton-MacDonald Survey Committee for approval of the establishment of Crowder Junior College stated:

> We would point out that the key factor in establishing a Junior College in this proposed area is the acquisition of certain facilities on the now abandoned Fort Crowder Reservation. . . . Conversations at the General Service Administration Office and the Regional Health, Education and Welfare Office in Kansas City

[30] Committee for Missouri Western Junior College, op. cit., p. 6.

> indicate that if the State Board of Education approves our request, they will look most favorably on our request for these facilities.[31]

The application of the Three Rivers Junior College District proposed that:

> The Poplar Bluff R-1 Board of Education has offered classroom space in Poplar Bluff school buildings for temporary use in order to expedite the opening of the college. The Poplar Bluff Loan and Building Association, owners of the old senior high school building, has stated that the building would be available on short term lease arrangements to the College Board of Trustees.[32]

C. Suggestions for presentation.--The narrative presentations cited above serve the purpose of indicating the availability of facilities, however, they do not describe in any manner the capabilities or capacities of such facilities. Such a description should be included in the application document. In addition the willingness of the proprietary agency should be indicated by a letter of intent signed by a responsible officer of the agency. This letter should become a part of the application.

Item 9: Guidance Facilities Now Available

A. What was reported?--No mention was made about guidance services available in the proposed districts. The guidance function was often advocated as a goal of the new junior college.

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[31] Survey Committee for Newton-MacDonald Counties, op. cit., pp. 1-2.

[32] Survey Committee for Three Rivers Junior College, op. cit., p. 8.

B. Example of presentation.--None.

C. Suggestion for presentations.--The study of high school programs, mentioned previously in Item 7, should include an analysis of counseling services available through the high schools. Other guidance services which should be described are those of the local employment service office, the welfare administrative agency and similar agencies. In addition each of the guidance agencies should be asked to write a statement of the assistance the proposed junior college could provide to them in the fulfillment of their duties.

Item 10: Teaching Staff Available

A. What was presented?--Nothing.

B. Example of presentations.--None.

C. Suggestions for presentation.--A proposed district's sponsors should develop a suggested program of offerings based upon the needs as identified by the studies outlined above. With the assistance of the Director of State Public Junior Colleges and the professional consultants, the instructional staff needs should be determined in terms of specific competencies. Having derived these needs, the sponsors should seek an analysis of the availability of such staff members through the Missouri Commission on Higher Education, the University of Missouri, the Coordinating Council of

State Colleges and the Junior College Presidents Council. (The purpose of such a process is not to preclude the establishment of the institution or certain programs but to introduce a realistic perspective and expectation on the part of the sponsors.)

Item 11: Community Attitudes--Evidences of Community Support, Hostility, or Indifference

A. What was presented?--No item of the twelve was so thoroughly treated or so well documented as this item. One evidential statement found in all but one of the applications was the listing of the membership of the survey committees. These lists generally indicated that the committee was geographically representative of the proposed district, however, some committees were made up of a narrow segment of the community such as the superintendents of the area school districts, while another committee, the Jefferson County Survey Committee,[33] was broadly representative of the business, industry, and professions of the district.

A second piece of evidence was a tally of the petition signatures. The petition requirement referred to in the State Board of Education regulations presented in the introduction to this section of Chapter IV, specified that signatures of registered voters, amounting to 5 per

[33]Committee for Jefferson County, op. cit., pp. 2-5.

cent of the total votes cast in the previous annual school election for each of the school districts within the proposed junior college district, must be obtained.

The applications from Newton-MacDonald, Jefferson, and Buchanan (Missouri Western) counties contained tables indicating the number of votes cast in each constituent district in the previous annual school election; the number of signatures needed in each district to meet the required 5 per cent level; and the number of signatures obtained in each district. The Crowder and Jefferson applications indicated signatures equal to more than 60 per cent of the previous year's vote total, while in the Missouri Western district the petition signatures equalled 21 per cent of the previous year's total.

Although this does seem to be a good indicator of local support, it may not tell the entire story. For example, in an application submitted in 1966 for a junior college in the three southeastern-most counties in Missouri, 3,404 signatures were obtained as compared to a required 306.[34] The application received the approval of the State Board of Education but the junior college was turned down by the voters.

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[34]Steering Committee for the Proposed Delta College of Missouri, Survey for Establishing the Delta College of Missouri (Bootheel Junior College) (Kennett, Mo.: Steering Committee for the Proposed Delta College of Missouri, 1966), p. 9.

In addition to the two elements of evidence discussed above, statements about the support of parent, service, religious and political organizations were included, along with references to the support of newspapers and radio-television stations. No documentation of such support was included.

One application contained an historical sketch of the process which led to the submission of the application. The sketch was followed by a list of the names of persons attending the organizational meeting.[35]

None of the applications discussed any possible hostility existing within the district regarding the establishment of a junior college. The Three Rivers Junior College District has had a suit by taxpayers, challenging the legality of the district, move through the courts to the Missouri State Supreme Court. The legal status of the district was verified and it is now in operation.[36]

The junior college at Sedalia is not yet in operation having experienced a taxpayers suit challenging that district's legal status.[37] The application which will be

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[35]Committee for Jefferson County, op. cit., pp. 6-8.

[36]Three Rivers Junior College District et al. vs. The Honorable W. O. Statler, MSC 53192, Nov. 13, 1967.

[37]State ex rel. Junior College District of Sedalia vs. Barker, MSC 52939, Sept. 1967.

reviewed later in this study contained no hint of the challenge.

B. Example of presentations (see Appendix D).-- The list of the survey committee members in the Jefferson College application[38] contained the individual's name, position, firm or governmental agency, and community represented. A similar format was used in the Missouri Southern application.[39]

The indication of the petition signatures contained in the application of Missouri Western[40] included the school district name, number of votes cast in last annual election, source of information on last vote, number of signers needed, the number of signatures obtained, and the per cent the number of signatures were of the total votes cast.

The indications of interest have been expressed frequently. Typical of this type of statement, Three Rivers' application contains the following statement:

> Interest in the proposed Junior College district has been expressed by many groups in material ways. For example: The County Court of Butler County has gone on record to provide land for the proposed college at no cost. Cash contributions have been received from Civic and Business organizations. Many individuals have made personal contributions.

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[38] Committee for Jefferson County, op. cit., pp. 2-5.

[39] Committee for Missouri Western, op. cit., pp. 3-4.

[40] Ibid., p. 15.

> Four banks and the Building and Loan Association have made substantial contributions to the finance committee. The proposal to organize a Junior College District has been endorsed by churches, P. T. A. groups, civic and service groups, and school officials throughout the area. . . .[41]

The Missouri Western application contained a reference to the fact that newspapers and radio-television stations (named in the application) "have given wide publicity and favorable editorial comment to the proposed junior college district."[42]

C. Suggestions for presentation.--

1. The survey committee membership should be listed in the manner used in the Jefferson College application described above. In addition, a chronological review of the committee's activities should appear in narrative form in the introduction to the application itself.
2. The results of the petition activity should be tabulated and presented in the form found in the Missouri Western application.
3. The employment needs survey suggested in Item 5 should contain questions which will measure the attitudes and opinions of business and industry in the area toward establishment of the junior

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[41] Survey Committee for Three Rivers Junior College, op. cit., p. 8.

[42] Committee for Missouri Western, op. cit., p. 7.

college. The results of these questions, for and against, should be tabulated and included in the community interest section of the report.

4. The follow-up questionnaire (Item 3) and the parental interest questionnaire (Item 4) should include questions which will elicit the parents' attitude toward the establishment of the new junior college. The results of these questions should be included in the community interest portion of the application.
5. Any reference to contributions made toward the establishment of the junior college should be documented with a list of the contributors and the total amount raised through these contributions. Pledges of gifts of land or other assets should be documented in writing in the application.
6. Support and encouragement from local civic, educational and service groups should be made through motions adopted by these organizations. Whenever possible, or reasonable, a letter from an officer of the organization stating the motion and its date of approval should be included as documentation.
7. Support by news media should be cited, including the date and the text of the statement.

8. Some means should be devised to assess the strength of opposition to the proposed junior college district. Letters from leaders of groups, or from individuals, opposing the college should be included.

Item 12: Extent of Local Resources for Financing the Community Junior Colleges

This item will be treated briefly at this time as it serves as the major study of Chapter VI. At this time, a description of what was presented, along with examples, will be offered, however, no suggestions will be presented until the analysis has been completed in Chapter VI.

A. What was presented?--Basic to financing a junior college operation from local taxes is an indication of the tax base or assessed valuation of the district. All districts provided a specific assessed valuation although the degree of accuracy varied greatly from one application to the next. Missouri Southern's application[43] estimated the assessed valuation to be $58,000,000 at the time of application with projected increase to $130,000,000 if the district were allowed to become an expanded independent district. The Crowder College application[44] was more

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[43]Survey Committee for Establishing a Junior College District of Jasper County, Mo., op. cit., p. 9.

[44]Survey Committee of Newton-MacDonald Counties, op. cit., p. 12.

specific in stating the assessed valuation to be $44,188,242 with a bonded indebtedness of $1,656,800. Mineral Area presented detailed information of the assessed valuation in five counties amounting to $106,500,000[45] and then estimated the total assessed valuation of the district to be $80,000,000[46] in a budget. No explanation for the difference was provided.

The Jefferson, Missouri Western and Three Rivers application contained detailed information on the tax base by constituent school districts. The Three Rivers application contained a page entitled "Financial Probabilities --Three Rivers Junior College--First Year of Operation,"[47] which estimated receipts and expenditures.

B. Examples of presentation (see Appendix E).--The Three Rivers application provided documentation for the ability of the district to finance a junior college. One page of the application presented a table indicating: (a) school districts by county; (b) enumeration October 1965; (c) 1965 assessed valuation not including utilities; (d) assessed valuation of utilities 1965 (a valuation which may be taxed for junior college purposes but not for

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[45]Survey Committee of Mineral Area, op. cit., p. 3.

[46]Ibid., p. 4.

[47]Survey Committee for Three Rivers Junior College, op. cit., p. 18.

individual school districts); (e) bonded indebtedness (a factor which may impinge upon the willingness of the voters in incurring bonded indebtedness for junior college purposes); and (f) tax levy.[48]

On the following page, "Financial Probabilities . . ." mentioned above, the application estimated receipts from: (a) taxes; (b) state aid; (c) resident fees; (d) non-resident tuition and fees; (e) grants and federal aid; and a total of the receipts. The application then presented an estimate of expenditures for: (a) academic program; (b) vocational program; (c) rental and operation of building; (d) student activities; (e) capital outlay; and a total of expenditure.[49]

C. Suggestions for presentation.--Suggestions will be included in the recommendations formed in Chapter VI.

Kansas City and St. Louis

As has been noted in the limitations of this study, the Metropolitan Junior College District of Kansas City and the St. Louis-St. Louis County Junior College Districts are being treated separately as these two districts serve over half of the population of Missouri. Dr. Rex Campbell states, "Today these two cities, their suburbs, and their fringes contain the majority of the population in

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[48] Ibid., p. 17.

[49] Ibid., p. 18.

Missouri."[50] To demonstrate the point more specifically, the combined population of St. Louis and Kansas City in 1960 was 2,283,111 of a total 4,319,813 state population or 52.3 per cent.[51] Therefore, the likelihood of other districts of this size being created appeared to be impossible within the immediate future.

In making application for establishing these junior colleges in their present form, a great deal of the political power and the tremendous resources of these two communities were brought to bear. For example, the study which led to the formation of the St. Louis Junior College District was executed in 1959 and distributed in its finished form on January 22, 1960.[52] This action preceded passage of the Enabling Act of 1961 which first allowed for the combining of "two or more contiguous public school districts" to organize a junior college district, prior to that Act junior college districts were formed on a single school district basis. It is generally conceded around the state that the multiple school district recommendations of this report coupled with the political power of the St. Louis area produced the revised legislation.

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[50] Rex R. Campbell, Population and Higher Education in Missouri (Columbia, Mo.: University of Missouri, 1967), p. 12.

[51] Ibid., p. 15.

[52] Committee on Higher Educational Needs of Metropolitan St. Louis, op. cit., pp. 3-4.

The Shils report, sponsored by the "Committee on Higher Educational Needs of Metropolitan St. Louis" and presented to the "Governor's Committee on Education Beyond the High School in Missouri" provides a fine example of the documentary evidence appropriate to indicate the need for establishment of a junior college district. The report is based on four "principal studies" which were:

A. Demographic projections--Greater St. Louis Metropolitan Area until 1973.
B. An examination of Collegiate Capacity, other Collegiate Summarizations--as well as Non-Collegiate Post-High School Programs--Greater St. Louis Educational Area to 1973;
C. The Post-High School Plans and Aspirations as well as the Socio-Economic Backgrounds and Mental Abilities of 11,800 High School Seniors in the Four Unit St. Louis Metropolitan Educational Area;
D. A Study of the Needs of Business and Industry in the Greater St. Louis Metropolitan Area, with Respect to Requirements for Post-High School Training Resulting from Changing Technology.[53]

In reporting "Demographic Projections," five tables were drawn providing the following information.

1. A population analysis of the Greater St. Louis Area: 1940-1975.
2. A comparison of population changes in the United States, the State of Missouri and the St. Louis Standard Metropolitan Area: 1900-1975.
3. A comparison of "live births" in the United

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[53] Ibid., pp. 21-73.

States, Missouri, Illinois and the Greater St. Louis Area: 1940-1956.

4. College Age Group Projections (18-21): 1958-1973, and
5. Per Cent of Increase Expected in College Age Population (18-21): 1958-1973.[54]

The data presented included projections by minor civil divisions for the area within the proposed districts and those areas adjacent to it, both in Missouri and Illinois.

The treatment of collegiate attendance was presented in twenty-three tables which included data relative to attendance patterns of students from the area; analyses of capacities and present enrollments of twenty-one degree granting institutions in the area; a depiction of collegiate enrollment pressures as portended by public and private elementary-secondary enrollment; analyses of admission requirements and tuition-living cost; and enrollments in proprietary school and nursing schools.[55]

In analyzing the responses of 11,800 high school seniors the Shils report presented a very detailed analysis of students vocational-educational choice as correlated to socio-economic background, race, religion, rank in class, principal's recommendations and other elements of the students background. This was a very impressive

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[54] Ibid., pp. 81-86.

[55] Ibid., pp. 87-109.

compilation of data to indicate the need of students for post-high school educational facilities.[56]

The business and industry employment needs were analyzed on the basis of responses from forty firms employing 98,581 persons in 1959. The analysis included four major categories:

1. Jobs requiring technical skills.
2. Employment projections to 1965.
3. Employment labor force and population projecting to 1965.
4. Types of post-high school training desired by (business) institutions in the area.[57]

The St. Louis study was adequately supported by funds from all the cooperating school districts and private contributions. The study was in progress for a year and was guided by a sophisticated researcher and a professional staff. Districts which may seek establishment of a junior college in the future may not be so well endowed with resources, but they can profit from the example this study provides and from the realization that a year was spent in its preparation.

The Kansas City application and supporting study was designed for a different purpose than that of the St. Louis area. Kansas City, itself, was served by a junior college

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[56] Ibid., pp. 110-147.

[57] Ibid., pp. 67-73, 148.

which had been part of the Kansas City Public School System since 1915. Their application, submitted in April, 1964, was for the purpose of creating an expanded independent district.[58] The application was the result of almost two years of study and work. Basic to this application was the Citizen Survey of Kansas City Metropolitan Area Junior College District Possibilities conducted under the directorship of Dr. Raymond Young, University of Michigan, and utilizing Dr. S. V. Martorana, United States Office of Education, as survey consultant.

The presentation of the data supporting the expansion of the Kansas City district was presented in a format which is typical of junior college feasibility studies conducted recently. Briefly, the study included four chapters dealing with demography; programs and objectives; legal, financial and organizational concerns and recommendations.

Chapter I of the Young study provided information based in part upon Census Bureau Data and in part upon the effort the citizen's survey committee members to describe demographically the proposed district. It included data relative to the following factors about the area.

1. Economic background.
2. Background and development of education.
3. Cultural facilities.

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[58]The Committee for the Junior College District of Metropolitan Kansas City, op. cit., p. 3.

4. Population characteristics.
    a. Race
    b. National origin
    c. Age
    d. Marital status and households
5. Population migration.
6. Educational attainment.
7. Population growth and school enrollment trends.
8. Enrollment projections for the proposed area junior college district.[59]

The presentation of programs and objectives for the junior college in Chapter II began with a brief essay on the functions which are appropriate to public junior colleges. The report then analyzed the specific need of the proposed district through presentations of:

1. The objectives and programs of the existing Kansas City Junior College.
2. The non-resident full- and part-time enrollment at the existing junior college.
3. The educational intentions and occupational aspirations of Kansas City area high school seniors.
4. The proportion of high school graduates continuing formal education.

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[59]Raymond J. Young, Citizens Survey of Kansas City Metropolitan Area Junior College District Possibility (Kansas City, Mo.: The Committee for the Junior College of Metropolitan Kansas City, 1962), pp. 1-24.

5. The needs of industry and business in the area for technical and semi-professional workers.
6. The objectives of other institutions of higher education in the area.[60]

In presenting the above information the survey committee relied upon several studies conducted for this specific purpose in addition to study reports prepared for other reasons. The committee first analyzed the existing Kansas City Junior College in terms of the objectives as specified in the 1962-63 catalogue, the main division of the college (arts and science, engineering and engineering technology, and business), and degrees offered (Associate in Arts, Associate in Science, Associate in Science and Engineering, Associate in Applied Science, and Associate in Business). The committee also drew upon an earlier (1957) analysis of the enrollment at Kansas City relative to high school attendance and day and evening programs, comparing these findings with conditions in 1962.[61]

The research staff instituted a survey of all the high school seniors in Jackson County (Kansas City area) to determine their educational intentions and occupational aspirations. Of special significance to the proposal of an expanded junior college district, was the indication that 59 per cent of the senior boys and 48.6 per cent of

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[60] Ibid., pp. 25-51.

[61] Ibid., pp. 33-36.

girls expressed plans for college attendance, while another 8.3 per cent and 17.5 per cent of the boys and girls, respectively, intend to pursue training at specialized schools. The information gathered relative to occupational aspiration, when compared to the composition of the labor force of the Kansas City area, indicated a great need for more "realistic counseling and guidance service in both the secondary school and the junior college."[62]

Another study report used to portray the need for an expanded junior college was an analysis of the patterns and proportions of college attendance of high school seniors in the area. This analysis indicated that the per cent of high school seniors had risen from forty-one in 1958 to forty-seven in 1962. The analysis also indicated that of those students scoring above the 50th percentile on the Ohio State University Psychological Test ("a test designed to determine the ability of the tested to succeed in college"), approximately 66 per cent attended some form of post-high school educational institution.[63]

The survey committee interviewed business and industry leaders in the proposed district to determine needs for technical and semi-professional workers in the area. The findings provide a general description of the types

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[62] Ibid., pp. 36-38. [63] Ibid., pp. 39-41.

of education and training which should be included in the program of the expanded junior college.[64]

Finally, the survey committee staff contacted each of the institutions of higher education in the area to determine their perceived objectives and the relationship of these to the proposed junior college. Seven institutions were included along with statements of the chief administrator of several regarding the junior college. Very little apprehension or reservation was evident in these statements.[65]

In Chapter III the survey committee presented the Missouri legal and regulatory provisions which apply to the expansion of the Kansas City Junior College District. The study then discussed the financing of the proposed junior college which is basically provided by student tuition and fees, local property taxes, state aid, and some federal aid.[66]

A projection of operating expenditures was derived, based upon a per capita operating cost ranging from $545 to $600 per student. This per capita cost was multiplied by the projected enrollment to estimate future expenditure. This figure was then analyzed in relation to projected assessed valuation to determine the necessary tax levy to raise the required monies.[67]

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[64] Ibid., pp. 41-47.

[65] Ibid., pp. 47-51.

[66] Ibid., pp. 52-55.

[67] Ibid., pp. 55-58.

As in the case of the St. Louis study, this study represented an adequately financed research project under the direction of an expert in the development of higher education. The sophistication exemplified in this report exceeded that of the surveys presented by the "selected" districts which were discussed in the previous section of this chapter.

Recently Formed Districts Not Yet in Operation

In this section the applications for establishing junior colleges at Sedalia (since named State Fair Community College) and East Central Missouri will be examined. State Fair Community College was approved by the voters in April, 1966. However, the institution has not entered operation due to the law suit discussed earlier in this chapter. The East Central Missouri Junior College District was voted into existence April 3, 1968.

The State Fair Community College Survey was very similar to the surveys of the "selected" junior college district surveys in almost every detail. One major difference does exist, however, in that this study was accompanied by two supporting documents. One was a doctoral dissertation written by Dr. Thomas Norris,[68] Superintendent of the Sedalia Public School, (a member of the survey

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[68] Thomas J. Norris, "A Procedure for Determining Junior College Curriculum" (unpublished doctoral dissertation, University of Kentucky, 1962).

committee) which advocated the establishment of the junior college at Sedalia. In his dissertation Dr. Norris made an analysis of the attendance patterns of Pettis County high school graduates from 1957-1961. A comparison was drawn between the Norris study and the patterns of Sedalia's Smith Colton High School graduates of 1964 to bring the data up-to-date.[69]

The second document included with the State Fair application, was an economic development survey conducted by the Midwest Research Institute of Kansas City.[70] This document made ten recommendations, one of which was the establishment of a junior college in Sedalia. The recommendation was made in view of the value of junior college to the economic future of the community. "Sedalia's labor force is a definite community asset, but the lack of post-high school vocational training facilities must be considered a weakness."[71] Following a brief description of educational facilities in the immediate and adjacent areas, the report continues:

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[69]Survey Committee of the Proposed Junior College District of Sedalia, Missouri, Survey for Establishing the Junior College District of Sedalia, Missouri (Sedalia, Mo.: Survey Committee of the Proposed Junior College District of Sedalia, Mo., 1965), pp. 16-17.

[70]Midwest Research Institute, The Economic Development Potential of Sedalia, Missouri (Kansas City, Mo.: Midwest Research Institute, 1964).

[71]Ibid., p. 58.

> A public post-high school vocational education program should be designed to perform two basic functions. It should provide a continuing vocational education program for those just entering the labor force who need more thorough and/or specific training, and it should make available the instruction necessary to update and upgrade the skills of those adults already in the labor force. A vocational training program would also offer local manufacturers and prospective manufacturers a source of labor trained to meet their specific needs.[72]

Later in the report this call for vocational education at the post-high school level is transformed into an advocation of a comprehensive community college.[73]

In the economic development study, the demographic characteristics of Sedalia are discussed in the same detail as those presented earlier in the Kansas City application.

The East Central Missouri Junior College District application[74] which led to the approval by voters on April 3, 1968 was very similar in organization to the best of the "selected" junior college districts applications. It was the consumation of the effort of a survey committee and of eighteen individuals and a steering committee of thirty-seven individuals.[75] Both committees were broadly representative of professions and occupations in the area, however, the breadth of geographic representation was not indicated.

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[72] Ibid., p. 59.

[73] Ibid., p. 66.

[74] Survey Committee of the Proposed Junior College District of East Central Missouri, Survey for Establishing the Junior College District of East Central Missouri (Union, Mo.: Survey Committee for Establishing the Junior College District of East Central Missouri, 1967).

[75] Ibid., pp. 1-3.

This application provided evidence of interest in higher educational opportunities in the area through a detailed review of courses offered at the request of local residents through the University of Missouri Extension center.[76] The analysis included offerings from Fall Semester 1966 through the proposed offerings of Spring Semester 1968. Of those courses for which actual enrollment figures were presented (twelve different courses), eleven were courses at the freshman or sophomore college level. Enrollments for the semesters were: Fall 1966, 162; Spring 1967, 104; Summer 1967, 22; and Fall 1967, 165.[77] The report also indicated that eighty persons enrolled in correspondence credit courses through the University of Missouri, while fifty-eight individuals enrolled in high school equivalence courses sponsored jointly through University Extension and Washington High School. It is further stated that the efforts of the Extension Center were to provide such offerings until such time as a junior college might be established.

Summary

The purpose of the applications analyzed is to provide evidence of: (a) need, (b) adequate enrollment potential, and (c) adequate financial resources. In the opinion of this author, very little substantive data was presented

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[76] Ibid., pp. 16-17. [77] Ibid.

to indicate the need for junior colleges in the "selected junior college districts." The applications frequently merely reflected the arguments advanced for community-junior colleges in general. Little, if any, documentary evidence was provided to portray the unique needs of the particular area.

Basically the applications addressed themselves to eight of the twelve items prescribed by the Commission on Legislation of the American Association of Junior Colleges. The items most frequently treated were:

1. Socio-economic and population descriptions of the proposed district.
2. Maps showing road systems, population centers, and commuting routes to a proposed campus center. (No indication of topography was included.)
4. Prospective community junior college students.
5. Programs needed in the community junior college.
6. Post-high school programs now available in the area to be served.
8. Facilities and/or sites available which may be used either temporarily or permanently by the college.
11. Community attitudes--evidences of community support (no indication of community hostility or indifference was presented), and
12. Extent of local resources for financing the community junior college.

Items which were not included in any manner were:

3. Follow-up studies of high school students in previous years.
7. Programs of high school level in the area.
9. Guidance facilities now available, and
10. Teaching staff available.

In terms of detailed studies to substantiate need, interest and support, only one survey was made (the Crowder, Jefferson and Three Rivers College applications included the results of a survey of the aspirations of high school students). In the opinion of this author, the questionnaire used did not discriminate sufficiently to be used as a predictive instrument of college enrollment for the specific junior college because:

1. The questionnaire was of a superficial nature.
2. The questionnaire was misleading in that it proposed tuition free junior college in the area. (No tuition is charged to resident students under the age of twenty-one, however, maintenance fees charged to local residents of junior colleges in Missouri range from $100 to $300 per year. No institution is free of such charges.)
3. The questionnaire did not discriminately determine whether barriers to higher education existed which could be alleviated through the establishment of a junior college (see Appendix C).

There was no evidence that parental views, area high school graduates' views, or business and industry views had been solicited by the citizens' committees which did not utilize professional direction or consultants.

Among the "selected" junior college districts' applications, Jefferson and Missouri Western provided the greatest percentage of substantiated data, 87.5 and 53.8, respectively. The Mineral Area application substantiated 66.7 per cent of its six statements relative to need. (The case for an expanded junior college district for this area was not, in this author's opinion, well or accurately portrayed.) Most professional in its appearance was the application for Three Rivers Junior College, however, only 27.8 per cent of the statements were substantiated.

The "selected" junior college districts presented their case more satisfactorily in terms of "prospective community junior college students" (Item 4) and "community attitudes . . ." (Item 11) than any of the other items, however, even the treatment of these items did not seem adequate.

The data presented with the applications for the St. Louis and Kansas City area were more sophisticated and more convincing in their presentation of need. The skilled techniques of Dr. Shils and Dr. Young, two

professional consultants in the development of institutions of higher education were very evident.

Both of these documents related demographic, educational and business-industrial information which was drawn into a portrayal of existing needs and future potential for the proposed junior college. Dr. Young provided a formulated projection of enrollment which was missing in the applications of the "selected" junior college districts.

The applications of the two districts not yet in operation proved to be more sophisticated than the "selected" districts but not than the two metropolitan area districts. The Sedalia application was accompanied by two research studies which concerned themselves either entirely or in part with the need for establishing a junior college in Sedalia. Thus, greater substantiation was presented than in the "selected" junior college district application.

The East Central Missouri Junior College District application was similar to the best of the applications of the "selected" junior college districts. It presented more evidence of need for higher education than was found in the other applications.

The most general criticisms of all the applications, except those of the St. Louis and Kansas City districts, were:

1. The lack of documentation or substantiation of statements made in the application.
2. The lack of sophisticated measurement of attitudes and interest in the establishment of junior college districts in the area.
3. The lack of clear statements of the need for a junior college, and
4. The lack of systematic projections of enrollment potential and financial support capabilities (these will be discussed in Chapters V and VI).

CHAPTER V

ANALYSIS OF ENROLLMENT POTENTIAL

Introduction

The purpose of this chapter is to examine various methods of computing potential enrollment for a community junior college; to investigate factors affecting such projections; and to apply the methods, modified by these factors, to junior college development in Missouri.

As important as the prediction of enrollment is to the development of viable junior college districts, no single method has been found which will adequately accomplish the task. Dr. Young states, "The projection of enrollment is, at best uncertain in view of the multitude of contingencies which may affect the number and proportions of students attending college and selecting various types of colleges."[1]

A report by the Texas Research League observes:

> There is no clear-cut certain method of predicting the potential enrollment of a proposed junior college. All of the methodology examined by the research staff has considered the problem in terms

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[1]Raymond J. Young, Citizens Survey of Kansas City Metropolitan Area Junior College Possibilities (Kansas City, Mo.: Citizens Survey Committee for Kansas City Metropolitan Area Junior College District, 1962), p. 15.

> of criteria which can usually be relied upon to produce the required enrollment; but no firm statistical device to achieve this end with a high degree of certainty has been found.[2]

The purpose of the League's report was to study "the relationship between the State Board and the local junior colleges of this State"[3] (Texas).

In the 1957 survey of higher education in Michigan, Martorana utilized three measures of population concentration: "(1) school districts that have enrolled 800 students in grades 9 to 12; (2) counties that have 1000 persons 18-19 years; and (3) counties that have 2000 persons of age 19-22 years;"[4] for the identification of likely localities for community colleges. The use of more than one measure was advocated to accommodate the unique conditions of particular areas of Michigan and attests to the view that no one system can be entirely relied upon to predict community junior college enrollment.

In this chapter several methods of computation will be presented and analyzed in terms of their application to the "selected" junior colleges in Missouri. The various computational formulae are based upon four standards: (a)

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[2]Texas Research League, The State Board and the Junior College (Austin: The Texas Research League, 1964), p. 31.

[3]Ibid., p. ii.

[4]S. V. Martorana, The Community College in Michigan (Lansing, Mich.: Michigan Legislative Study Committee on Higher Education, 1957), p. 105.

total population; (b) high school enrollment; (c) high school graduates; and (d) age level population. The derivation of projections based upon each of these will be presented in conjunction with the applicability to the "selected" Missouri junior colleges.

Application of Formulae for Potential Enrollment Estimation to "Selected" Junior Colleges in Missouri

Total Population

One method used to compute projected potential enrollment is based upon the total population of the district. An example of this is the Illinois "Master Plan" for higher education which advocates junior colleges of 1,000 full-time student potential within five years from the date of establishment. The stated required standard to insure this enrollment is a total population of 30,000.[5]

Assumption.--The implicit assumption of the Illinois standard is that junior college enrollment is equal to 3.3 per cent of the total population.

The relationship between total population and FTE enrollment for the "selected" junior colleges demonstrated a range of 1.6 per cent, from .7 to 2.3. It is interesting to note that both the mean and median of the percentages for the five institutions that have been in operation at

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[5]Illinois Board of Higher Education, A Master Plan for Higher Education in Illinois (Springfield: The Illinois Board of Higher Education, 1964), p. 47.

TABLE 5.--Relationship of FTE enrollment in the "selected" Missouri public junior colleges to the total population of the counties served by the institution.

Junior College	Total Population[a]	FTE Enrollment 1967-68[b]	Per Cent of Total Population
Crowder	30,279	403	1.3
Mineral Area	49,745	634	1.3 (C_{50})
Jefferson	112,841	764	.7
Missouri Western	103,568	1,048	1.0
Missouri Southern	72,869	1,656	2.3
Three Rivers[c]	49,129	401	.8
Total[d]	369,302	4,505	1.2
			$\bar{X}$ = 1.3

[a]Source: Dr. Rex Campbell, Demographer, University Missouri.

[b]Source: Missouri Commission on Higher Education.

[c]Institution in first year of operation.

[d]Does not include Three Rivers.

least two years, fall at the 1.3 per cent level. The computed percentage for the total population as it relates to the total enrollments of these districts was 1.2 per cent. (A liberal projected estimated enrollment for Three Rivers next year might be set at 160 per cent of

the present enrollment or 640 students. Three Rivers would then reach the 1.3 per cent level comparable to the other districts.)

It is evident that the application of the Illinois criterion to the "selected" Missouri districts or similar areas will not obtain the same desired potential enrollment.

High School Enrollment

Principally, two methods are used to compute projected potential enrollment based upon high school enrollment within the junior college district. These methods are actually two sides of the same coin. Wattenbarger in his study of Florida suggests that, "the potential enrollment of day students should be calculated on a basis of one junior college student for every three students enrolled in high school grades ten through twelve (1:3).[6] Such a plan is a modification of a recommendation of Leonard V. Koos[7] who proposed a ratio of one student to every three enrolled in grades nine through twelve. The criterion was stated as a high school enrollment sufficient to insure 400 potential full-time students with a minimum of 200.

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[6]Florida Community College Council, The Community Junior College in Florida's Future (Tallahassee: Florida State Department of Education, 1957), p. 47.

[7]Ibid.

A study in Iowa in 1962 recommended that junior college districts should have a "minimum enrollment of 5000 public, private and parochial pupils in grades nine through twelve."[8] It was felt that this minimum criterion would tend to "obtain potential enrollment of approximately 1,000 community-college students and would almost insure the 500-level enrollment that was agreed upon as being the necessary minimum."[9]

Thus the first method utilizing high school enrollment designates a ratio of junior college students to high school students which implies a minimum enrollment level in the high schools of a proposed junior college district.

The second method in this category is one discussed by Dr. Raymond Young[10] in the Kansas City survey cited previously. This method derives a ratio of junior college student enrollment to high school students enrollment based upon the previous experience of junior colleges assumed to be similar to the proposed junior college district. Young states, "During a three year period, the full-time equated freshmen and sophomore enrollments in

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[8]Iowa State Department of Education, Education Beyond High-School Age: The Community College (Des Moines: The Iowa State Department of Public Instruction, 1962), p. 8.

[9]Ibid., p. 25.

[10]Young, op. cit., p. 17.

all Illinois junior colleges were found to be about 18 per cent of enrollment in grades 9-12 within the district."[11] This derived ratio is then applied against the high school enrollment of the proposed district.

The basic difference between these two methods is, obviously, their manner of derivation, however, the approach utilized by Young appears to reflect more accurately the unique nature of the proposed district (i.e., if the area of the comparison institutions are truly like the proposed junior college district).

Assumptions.--The Florida plan suggests a standard of 33 per cent of three-year or 25 per cent of four-year high school enrollment as predictive of potential junior college enrollment, while Iowa uses 20 per cent (9-12) as its predictive standard.

Junior college enrollment in five of the selected districts (Table 6) equals approximately 20 per cent of the high school enrollment, grades nine through twelve, of constituent school districts. The mean percentage of the five districts was 19.7, the median 19.6, while the computed percentage for the totals was 20.2. The percentage ranged from 13.5 to 30.7, or 17.2 percentage points difference. It is the author's view that Jefferson Junior College will soon exceed the 20.2 per cent computed

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[11] Ibid.

TABLE 6.--Relationship of FTE enrollment in the "selected" Missouri public junior colleges to the high school enrollment grades nine through twelve of the school districts served by the institution.

Junior College	High School Enrollment 1967[a]	FTE Enrollment 1967-68[b]	Per Cent of High School Enrollment
Crowder	2,792	403	14.4
Mineral Area	3,096	634	20.5
Jefferson	5,677	764	13.5
Missouri Western	5,347	1,048	19.6 (C_{50})
Missouri Southern	5,402	1,656	30.7
Three Rivers[c]	4,434	401	9.1
Total[d]	22,314	4,505	20.2
			$\bar{X}$ = 19.7

[a]Source: Dr. Rex Campbell, Demographer, University Missouri.

[b]Source: Commission on Higher Education.

[c]Institution in first year of operation.

[d]Does not include Three Rivers.

average, however, growth at Crowder seems to have subsided. It appears that the pattern in Missouri more closely approximates the standards of Iowa than the criterion set forth in the Florida plan. The 20.2 percentage might be applied in the manner discussed by Dr. Young to determine full potential. The 9.1 percentage

of Three Rivers might be applied to approximate the initial enrollment at a new institution, however, more evidence should be developed as future institutions are established.

High School Graduates

Dr. C. C. Colvert, University of Texas, has been an influential force in the development of junior colleges in the southern and western sections of the United States. In his study for the Colorado State Department of Education, he uses an enrollment projection method based upon twelfth grade enrollment for the two years previous to that year for which the enrollment is being projected.[12] The twelfth grade enrollment used by Colvert does not coincide with the number of high school graduates but it is a step toward predictions based upon the primary source of junior college students.

It is another Texas group, the Texas Research League, which provides a prediction based entirely on high school graduates. The League reported, "Despite the concentration of authorities upon high school enrollment, the staff of the Research League believes that a better basis of projection is derived from graduations."[13] The reason

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[12]C. C. Colvert, A State Program for Public Junior Colleges in Colorado (Austin, Texas: The University of Texas, 1963), pp. 16-17.

[13]Texas Research League, op. cit., p. 32.

set forth was the lack of uniformity in the holding power of high schools throughout Texas. The Texas League compared the total number of graduates from districts with the succeeding years first-time enrollment from the service area and arrived at a ratio of 51.5 per cent. The computation suggested:

1. 300 high school graduates will result in 150 first-time enrollees in the college.
2. This will be equal to 60% of all first-time enrollees thus the college should have 250 total first-time enrollees.
3. First-time enrollees comprise 45% of total head count enrollment so that projected head count would be 556.
4. 86% of head count will equal FTSE (Full-time Student Enrollment), so a head count of 556 should equal 478 FTSE.[14]

The criterion for establishment was set at 500 FTSE, however, the league discounted any error of plus or minus 10 per cent.

Assumptions.--(a) ratio of first-time enrollees from the district to high school graduates of the previous year from the district equal to 50 per cent; (b) ratio of district first-time enrollees to all first-time enrollees equals 60 per cent; (c) ratio of first-time enrollees to head count equal 45 per cent; and (d) ratio of FTSE to head count equals 86 per cent.

The ratios of first-time junior college enrollees, residents of the district, to the number of graduates of district high schools, ranged from 28.8 to 53.8 per cent,

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[14] Ibid., p. 34.

TABLE 7.--Relationship of first-time junior college enrollees, residents of the district, to high school graduates of the previous school year.

Junior College	High School Graduates 1967[a]	First-Time Enrollees Residents of District Fall 1967[b]	Per Cent of High School Graduates
Crowder	604	169	28.8
Mineral Area	687	284	41.4 (C_{50})
Jefferson	1,129	415	36.8
Missouri Western	1,269	537	42.3
Missouri Southern	1,140	613	53.8
Three Rivers[c]	937	279	29.8
Total[d]	4,829	2,018	41.8
			$\bar{X}$ = 40.6

[a]Source: Dr. Rex Campbell, Demographer, University Missouri.

[b]Source: Missouri Commission on Higher Education.

[c]Institution in first year of operation.

[d]Does not include Three Rivers

a spread of 25.0 percentage points. The measures of central tendency, the median (C_{50}) 41.4 and mean percentage ($\bar{X}$) 40.6 were within 1.2 per cent of the per cent computed on the totals for the five districts, 41.8. The relationship analyzed in Table 7 depicts a

lower ratio between the graduates and first-time enrollees than the Texas level of 50 per cent. This indicates that Texas junior colleges enroll a higher percentage of district high school graduates than do the "selected" junior colleges of Missouri.

The ratios portrayed in Table 8 indicate that first-time enrollees from the junior college district compose a

TABLE 8.--Relationship of first-time enrollees, residents of the district, to the total number of first-time enrollees.

Junior College	Total Number First-Time Enrollees Fall 1967[a]	First-Time Enrollees Residents of District Fall 1967	Per Cent of Total First-Time Enrollees
Crowder	253	169	66.8
Mineral Area	364	284	78.0 (C_{50})
Jefferson	442	415	93.9
Missouri Western	602	537	89.2
Missouri Southern	852	613	71.9
Three Rivers[b]	323	279	86.4
Total[c]	2,513	2,018	80.3
			$\bar{X}$ = 80.0

[a]Source: Missouri Commission on Higher Education.

[b]Institution in first year of operation.

[c]Does not include Three Rivers.

larger proportion of the total number of first-time enrollees in the "selected" junior colleges (80.3%) than in Texas junior colleges (60%). The analysis indicated a close relationship between mean ($\overline{X}$ = 80.0), median (C_{50} = 78.0), and the computation based upon the totals 80.3. The percentage differential of 27.1 resulted from a range of 66.8 to 93.9 per cent.

TABLE 9.--Relationship of the total number of first-time enrollees to head count enrollment.

Junior College	Head Count Enrollment Fall 1967[a]	Total Number First-Time Enrollees Fall 1967[a]	Per Cent of Head Count Enrollment
Crowder	461	253	54.9
Mineral Area	814	364	44.7
Jefferson	939	442	47.1
Missouri Western	1,283	602	46.9 (C_{50})
Missouri Southern	1,868	852	45.6
Three Rivers[b]	481	323	67.2
Total[c]	5,365	2,513	46.8
			$\overline{X}$ = 47.8

[a]Source: Missouri Commission on Higher Education.

[b]Institution in first year of operation.

[c]Does not include Three Rivers.

In drawing a comparison (Table 9) between head count enrollment and the total number of first-time enrollees for the "selected" junior colleges, a close approximation of the Texas junior college proportion (45%) is evidenced in all three measures of central tendency. The computed percentage based upon the totals of the five districts, in operation for more than one year, was 46.8, with a median (C_{50}) of 46.9, and a mean percentage ($\overline{X}$) of 47.8. The percentages ranged from 44.7 to 54.9, a difference of 10.2 per cent.

It is interesting to note that Three Rivers, in its first year of operation, was composed of two-thirds first-time enrollees and one-third who were not classified as such.

The analysis of the relationship between head count and FTE enrollment (Table 10) produced a computational percentage of 84.0 based upon the totals of the five "selected" junior colleges. The median (C_{50}) was within 2.3 percentage points at 81.7 per cent, while the mean percentage ($\overline{X}$) approximated the computational percentage more closely with 83.4 per cent. The Three Rivers percentage, 83.0, indicates a similarity between institutions regardless of the state of development.

The 84.0 per cent reported above is quite comparable to the 86 per cent ratio experienced by the junior colleges in Texas.

TABLE 10.--Relationship of FTE enrollment to head count enrollment.

Junior College	Head Count Enrollment Fall 1967[a]	FTE Enrollment Fall 1967[a]	Per Cent of Head Count Enrollment
Crowder	461	403	87.4
Mineral Area	814	634	77.9
Jefferson	939	764	81.4
Missouri Western	1,283	1,048	81.7 (C_{50})
Missouri Southern	1,868	1,656	88.7
Three Rivers[b]	481	401	83.0
Total[c]	5,365	4,505	84.0
			$\bar{X}$ = 83.4

[a]Source: Missouri Commission on Higher Education.

[b]Institution in first year of operation.

[c]Does not include Three Rivers.

The predictive computation based upon the Texas Research League recommendations modified by the analyzed experience of the "selected" junior colleges of Missouri would read:

1. The number of district high school graduates multiplied by 40 per cent equals the estimated numbers of resident first-time enrollees.
2. The number of resident first-time enrollees equals 80 per cent of all first-time enrollees.

3. The total number of first-time enrollees equals 45 per cent of the total head count enrollment.
4. Head count enrollment multiplied by 85 per cent equals the approximate potential number of full-time equated students the junior college district could anticipate.

Age Level Population

Dr. John F. Thaden in a number of community junior college feasibility studies, conducted by the Michigan State University, Office of Community College Cooperation, has employed an enrollment projection formula based upon the number of persons eighteen and nineteen years old. Thaden's formula considered the proportion of enrollment to population eighteen and nineteen years of age in Michigan. In 1963 this proportion ranged from 29.4 to 72.2 per cent for eleven junior colleges in Michigan.[15] In a recent study Dr. Thaden stated that the ratio in nineteen Michigan community junior colleges was 35 per cent. Thaden's formula for projection began with a 20 per cent ratio for the initial year of operation and was increased by 3 1/3 percentage points each year until the ratio had reached 43 1/3 per cent.[16]

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[15]Dr. Max S. Smith, Final Report: Lake County Community College Feasibility Study (East Lansing, Mich.: Office of Community College Cooperation, Michigan State University, 1966), p. 39.

[16]Max S. Smith, Elmer Anttonen, and J. F. Thaden, Dickinson-Iron Area Community College Feasibility Study (East Lansing, Mich.: Office of Community College Cooperation, Michigan State University, 1966), p. 30.

Dr. Thaden also suggested that:

> . . . enrollment estimates are not predictions. They are estimates that are based largely on available, pertinent, relative criteria that are proven to be reasonably successful in the preparation of numerous feasibility reports of similar nature in the State.[17]

Regular analyses of the type used by Dr. Thaden have not been conducted in Missouri to this time.

Assumptions.--Based upon Michigan community colleges' experiences the ratio of community college enrollees to eighteen- and nineteen-year-old population was 35 per cent. The annual growth was assumed to be 3 1/3 per cent per year.

The analysis of the experiences of Missouri junior colleges relative to the proportion of FTE enrollment to eighteen and nineteen year olds (Table 11) indicates a percentage (34.1%) computed on the totals of the five "selected" junior colleges, closely approximating that of Michigan junior colleges in 1965 (35%). The two measures of central tendency computed revealed relative agreement, median (C_{50}) equaled 39.8 with a mean percentage ($\overline{X}$) of 36.9.

The range of percentages, however, indicates that the 20 per cent level selected by Dr. Thaden may be too high as one of the institutions formed in 1962 is currently at the 21.2 per cent level. On the other hand,

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[17] Ibid., p. 29.

TABLE 11.--Relationship of FTE enrollment in the "selected" Missouri public junior college to the population eighteen and nineteen years of age in the counties served by the institutions.

Junior College	Population 18 and 19 Years of Age 1967 (est)[a]	FTE Enrollment Fall 1967[b]	Per Cent of Population 18 and 19 Years of Age
Crowder	969 (3.2)	403	41.6
Mineral Area	1,592 (3.2)	634	39.8 (C_{50})
Jefferson	3,611 (3.2)	764	21.2
Missouri Western	4,143 (4.0)	1,048	25.3
Missouri Southern	2,915 (4.0)	1,656	56.8
Three Rivers[c]	1,572 (3.2)	401	25.5
Total[d]	13,230 (3.2)	4,505	34.0
			$\bar{X}$ = 36.9

[a]Estimation: Population estimates of Dr. Campbell, University of Missouri, multiplied by the percentage of population, ages eleven and twelve in 1960 census. Assumes a straight-line projection utilizing factor 3.2 for urban areas of 10,000 or more with no minor civil division constituting more than 67 per cent of the total population and 4.0 for areas where more than 67 per cent of the population is concentrated in a single minor civil division.

[b]Source: Missouri Commission on Higher Education.

[c]Institution in first year of operation.

[d]Does not include Three Rivers.

Three Rivers, currently in its first year of operation experienced a ratio of 25.5 per cent.

Correlation of Enrollment Factors to FTE Enrollment for the "Selected" Junior Colleges

In an effort to provide further sophistication and accuracy to the estimates of potential enrollments, statistical tests were conducted to measure the existence of correlation between the four bases for computing estimates and the degree to which these are related.

The degree of relationship was tested through use of Kendall's rank correlation coefficient (Kendall's Tau) for the individual factors of total population, high school enrollment, and eighteen-nineteen-year-old age levels as related to institutional size of full-time equated enrollment.

Correlations Based Upon the Six "Selected" Districts (Table 12)

The correlation coefficient for the relationship of FTE enrollment to total population was .467 which was significant at the .136 level.

The correlation coefficient for the relationship of FTE enrollment to high school enrollment (grades nine-twelve) was .467 which was significant at the .136 level.

The correlation coefficient for the relationship of FTE enrollment to the population of eighteen-nineteen year olds was .60 which was significant at the .068 level.

TABLE 12.--Institutional rank order for the single factors employed in the formulae for estimating potential FTE enrollment in the "selected" Missouri junior colleges.

Junior College	FTE Enrollment		Total Population		High School Enrollment		Population 18-19 Years Old	
Crowder	2	1*	1	1*	1	1*	1	1*
Three Rivers	1		2		3		2	
Mineral Area	3	2*	3	2*	2	2*	3	2*
Jefferson	4	3*	6	5*	6	5*	5	4*
Missouri Western	5	4*	5	4*	4	3*	6	5*
Missouri Southern	6	5*	4	3*	5	4*	4	3*

*Ranks excluding Three Rivers.

Correlations Based Upon the "Selected" Junior College Districts in At Least Their Second Year of Operation (Excluding Three Rivers) (Table 12)

The correlation coefficient for the relationship of FTE enrollment to total population was .40 which was significant at the .167 level.

The correlation coefficient for the relationship of FTE enrollment to high school enrollment (grades nine-twelve) was .60 which was significant at the .042 level.

The correlation coefficient for the relationship of FTE enrollment to population of eighteen-nineteen year olds was .60 which was significant at the .042 level.

Interpretations and Observations

It may be deduced that a closer and more significant relationship exists between the "population eighteen-nineteen year olds" and the FTE enrollment than between either of the other two single factors employed and the FTE enrollment. These findings tend to support the use of the "population eighteen-nineteen year olds" as a more related index of potential enrollment estimates.

Concordance

Since the Texas Research League formula developed a complex relationship between five factors in deriving the estimate of students, it was necessary to employ a statistical test capable of measuring the complex inter-relationships which produced the estimate. Kendall's Coefficient of Concordance was selected for this task.

Concordance Based Upon the Six Selected Junior College Districts (Table 13)

The coefficient of concordance:W of the five factors in the formula was .941 which was significant beyond the .01 level. (Conditions for the .01 level of significance given: K=5, N=6 is 229.4=S. The computed S for this concordance was 411.5.)

Concordance Based Upon the "Selected" Junior College Districts in At Least Their Second Year of Operation (Excluding Three Rivers) (Table 13)

The coefficient of concordance:W of the five factors in the formula was .968 which was significant beyond the .01 level.

Interpretation and Observation

Therefore, a multiple correlation or agreement indicating a close association among the five factors tends to support the use of the Texas League formula in the estimation of enrollment potential.

As a further examination of this formula, the initial input variable, high school graduates, can be measured in its relationship to FTE enrollment, the desired output, through application of the Kendall Tau as used on the single factors previously.

TABLE 13.--Institutional rank orders for the multiple factors employed in the Texas Research League formula for estimating potential FTE enrollment in the "selected" Missouri junior colleges.

	Crowder		Three Rivers	Mineral Area		Jefferson		Missouri Western		Missouri Southern	
High School Graduates	1	1*	3	2	2*	4	3*	6	5*	5	4*
First-time Resident Enrollees	1	1*	2	3	2*	4	3*	5	4*	6	5*
Total First-time Enrollees	1	1*	2	3	2*	4	3*	5	4*	6	5*
Head-count Enrollment	1	1*	2	3	2*	4	3*	5	4*	6	5*
FTE Enrollment	2	1*	1	3	2*	4	3*	5	4*	6	5*
Total	6	5*	10	14	10*	20	15*	26	21*	29	24*

*Ranks excluding Three Rivers.

TABLE 14.--Institutional rank orders for district high school graduates and FTE enrollments in the "selected" Missouri junior colleges.

Junior College	High School Graduates		FTE Enrollment	
Crowder	1	1*	2	1*
Three Rivers	3		1	
Mineral Area	2	2*	3	2*
Jefferson	4	3*	4	3*
Missouri Western	6	5*	5	4*
Missouri Southern	5	4*	6	5*

*Ranks excluding Three Rivers.

Correlation (Table 14)

The coefficient of correlation for the relationship of high school graduates to FTE enrollment equaled .60 with a significance level of .068.

Interpretation and Observation

Hence, when all six "selected" institutions are ranked in order the two factors demonstrating the highest correlation to FTE enrollment were high school graduates and population eighteen-nineteen year olds, a correlation coefficient of .60 at the .068 level of significance. However, when Three Rivers Junior College is deleted from the rank order (this institution is in its first year of operation) the correlation of FTE students

to high school graduates rises to a coefficient of .80 at the .042 level of significance. Meanwhile, the correlation coefficient population eighteen-nineteen year olds remains at the .60 level and the correlation coefficient of high school enrollment moves to that level. Removal of Three Rivers did not affect the coefficient of total population and FTE enrollment.

Program Comprehensiveness Index

The degree of comprehensiveness of program offerings was determined in light of the per cent of FTE students enrolled in the three major categories: (a) transfer; (b) career; and (c) special or unclassified. After a computation of the percentages for each, it was discovered that special or unclassified constituted a very minute portion of the FTE enrollment (.0 to 2.4 per cent). Thus it seemed more appropriate to develop two categories: transfer, and career or special unclassified.

The general contention concerning program comprehensiveness is that a direct relationship exists between the degree of comprehensiveness and size of enrollment. The visitations made in the conduct of this study produced a feeling of doubt that this applied to the "selected" Missouri junior colleges. The relationship was analyzed using the same statistical test (Kendall's Tau) to determine the correlation between FTE enrollment

and the percentage of enrollment in the two categories. Since the categories represent converse mathematical functions of each other, the computation of one correlation would provide the same correlation for the other but in the opposite direction.

TABLE 15.--Program Comprehensiveness Index with rank order designations based upon FTE enrollment[a] (see Appendix F).

Junior College	FTE Enrollment Rank	Percentage Enrolled in Transfer	Rank[b]	Percentage Enrolled in Career or Special	Rank[b]
Crowder	1	76.9	1	23.1	5
Mineral Area	2	84.4	3	15.6	3
Jefferson	3	77.9	2	22.1	4
Missouri Western	4	86.5	4	13.5	2
Missouri Southern	5	94.3	5	5.7	1

[a]Three Rivers was omitted from this analysis.
[b]Source: Missouri Commission on Higher Education.

Correlations (Table 15)

The correlation coefficient of the relationship of FTE enrollment to the percentage enrolled in transfer programs was +.80 which was significant at the .042 level.

Conversely, therefore:

> The correlation coefficient of the relationship of FTE enrollment to the percentage enrolled in career or special-unclassified was -.80 which was significant at the .042 level.

Interpretations and Observations

It appears that size does not produce comprehensiveness but that some other variables must influence the degree of comprehensiveness. A major influence may be the fact that Crowder and Jefferson were initiated after 1961 where no junior college had previously existed, while the other institutions were expansions of single function junior colleges with a well-developed tradition.

Summary

In Chapter V formulae based upon four factors: (a) total population, (b) high school enrollment, (c) population eighteen-nineteen years old, and (d) high school graduates; used in predicting potential enrollment were analyzed in terms of the "selected" junior colleges in Missouri. These analyses presented the assumptions, either explicit or implicit, based on the factors in the formulae which were then compared to the same factors in the "selected" junior colleges. The four basic factors were then tested in relationship to FTE enrollment to

determine the existence of correlation and the extent to which they were related by use of the Kendall Rank Order Correlation (Kendall's Tau).

The results of the analyses showed the following hierarchical array of enrollment projection methods.

Factor 1--Total population.--This method of determining potential enrollment is utilized in Illinois. The criterion implies a potential junior college enrollment equal to 3.3 per cent of the total population. In the "selected" junior colleges the enrollments approximated 1.2 per cent of the population. The correlation coefficient of this factor to FTE enrollment was .467, significant at the .136 level. This was the lowest observed correlation.

Factor 2--High school enrollment.--This method employed in Iowa and Florida, among many states, explicitly set a ratio of 20 and 25 per cent for junior college enrollees when compared to high school enrollees from the same district. A computation based upon the Missouri colleges indicated that the Iowa standard, 20 per cent, was more appropriate. The correlation coefficient based upon the relationship in all the "selected" junior colleges was .467 (significance level .136). When Three Rivers was deleted the coefficient became .60 (significance level .042). Thus, this factor is more closely related than Factor I.

Factor 3--Population of eighteen-nineteen year olds.--This factor proved to be more closely correlated than either of the two previously discussed factors. Dr. John F. Thaden has employed this basis in preparing estimates for junior college feasibility studies in Michigan, Ohio, New York, and several other states. He reported that junior college enrollment was equivalent to 35 per cent of the population eighteen-nineteen-year-old in Michigan in 1965. An analysis of the "selected" junior colleges in Missouri indicated a very close approximation (34%) to the Michigan percentage. The correlation coefficient of this relationship was .60 (significant at the .068 level) with six institutions considered, and .60 (significant at the .042 level) with Three Rivers deleted.

Factor 4--High school graduates.--This item was analyzed in two ways. First, it was analyzed as a part of a five factor formula developed by the Texas Research League, second, it was analyzed in terms of simple correlation using Kendall's Tau.

To analyze this factor as part of the Texas Research League Formula (the five factors are high school graduates, first-time resident enrollees, total first-time enrollees, head count enrollment, and FTE enrollment), Kendall's coefficient of concordance:W was derived which indicated a concordance value of .941 (all six institutions considered), and .968 (Three Rivers deleted), both of which were significant beyond the .01 level. The

coefficient of concordance: "W bears a linear relation to r_s"[18] of Spearman's rank order correlation. Since a very high W was derived a close association between all factors is indicated.

A second test of correlation was computed for high school graduates as they relate to FTE enrollment through application of Kendall's Tau. With all "selected" institutions considered the correlation coefficient was .60, significant at the .068 level; deleting Three Rivers the coefficient was .80 at the .042 significance level. This tends to support the use of this factor as a basis for enrollment projections.

Finally, the generally assumed view that comprehensiveness of program offering develops as the size of the institution increases seemed, in the subjective view of this author, not to be appropriate to the "selected" junior colleges in Missouri. In analyzing the relationship between FTE enrollment and the Program Comprehensiveness Index (the proportion of students enrolled in transfer programs as opposed to those enrolled as career or special-unclassified students), the correlation coefficient of .80 was derived for the FTE enrollment and transfer student enrollment, and hence, a negative

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[18]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956). p. 232.

coefficient of .80 for FTE enrollment and career and special-unclassified enrollees. Both were significant at the .042 level. Three Rivers was deleted from this analysis as their initial year's program was entirely transfer. The commonly assumed concept that comprehensive programs and increased enrollment size are related was not borne out by this analysis.

Suggestions for Presentation of Data Relative to Item 4 Prospective Community Junior College Students

In computing an estimate of enrollment for a new junior college, the application should contain the following basic data:

1. The total population presented in tabular form as suggested for Item 1 in Chapter IV.
2. High school enrollment, grades nine-twelve, presented in tabular form depicting the five years previous to the application and projections for the next five years.
3. The population eighteen-nineteen years of age, drawn from information in Item 1, Chapter IV. This should also be presented for the previous five years and the future five years.
4. The number of high school graduates from constituent high school districts for the previous five years and projected for the next five years.

The basic data should be utilized in conjunction with the ratios of FTE enrollment in state public junior colleges to:

1. Total population.
2. High school enrollment, grades nine-twelve.
3. Population eighteen-nineteen years old.
4. High school graduates, employing the Texas Research League formula.

The resultant projection should be considered as a range of possible enrollments which may be obtained, however, the projection based upon the Texas Research League Formula should be treated as the official estimation.

CHAPTER VI

ANALYSIS OF FINANCIAL SUPPORT

Introduction

One of the criteria specified in the legislative action creating the modern junior college in Missouri was a determination of: "Whether the assessed valuation of taxable, tangible property, in the proposed junior college is sufficient to support adequately the proposed junior college."[1]

As has been discussed previously this criteria, in its application, is commonly expressed as a minimum total valuation which range from $3,000,000 to $150,000,000 base. Presently the Missouri base is $60,000,000 for the establishment of new districts.

In this chapter, the analysis of contributing factors will be studied in relationship to enrollment from three basic vantage points: (a) revenue; (b) operational expenditures; and (c) capital outlay expenditures. The examination of the "selected" districts is of necessity limited to the five districts in operation for two years

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[1]Missouri State Department of Education, Missouri School Laws (Jefferson City, Mo.: Missouri State Department of Education, 1966), p. 280.

or more. No comparable data was available on Three Rivers Junior College District.

Revenue Sources

In establishing a minimum assessed valuation for establishing a junior college, the relationship of available local financing to the number of enrollees is seriously ignored. There appears to be an assumption that a perfect linear relationship exists between the increase in population and the increase in assessed valuation above the designated criterion base, or that there is a negative correlation, which is proportionately constant, between size of institution and the cost of education. In order to test the utilization of a basic minimum, of the type cited above, the relationship between the total assessed valuation and assessed valuation per FTE enrollee are studied.

Table 16 reveals a difference of approximately $112 million between the highest and lowest districts in terms of assessed valuation. The average valuation ($\overline{X}$) for five districts is $118 million while the median (C_{50}) was $147 million. The low assessed valuations of Crowder and Mineral Area tend to pull the mean considerably away from the median.

Further examination indicates that the amount of assessed valuation supporting each FTE enrollee varies approximately $100 thousand from highest to lowest. A

TABLE 16.--Data on assessed valuation and assessed valuation per FTE enrollee for the "selected" junior college districts in Missouri.[a]

Junior College	FTE Enrollment	Assessed Valuation	Assessed Valuation Per FTE Enrollee
Crowder	403	$51,000,000	$126,554
Mineral Area	634	80,100,000	127,548 (C_{50})
Jefferson	764	147,000,000 (C_{50})	192,408
Missouri Western	1,048	163,500,000	156,011
Missouri Southern	1,656	150,000,000	90,580
Total	4,505	591,600,000	131,496[b]
		$\bar{X}$ = 118,320,000	$\bar{X}$ = 138,620

[a]Source: Missouri State Department of Education.

[b]Computed--Total assessed valuation divided by 4,505 FTE enrollment.

cursory inspection also reveals that higher assessed valuations do not provide higher valuation per enrollee (e.g., Missouri Southern has the second highest assessed valuation but the lowest assessed valuation per FTE enrollee). The mean ($\bar{X}$) assessed valuation per FTE enrollee was $138,620, the median ($C_{50}$) was $127,548, while a computed assessed valuation per FTE enrollee based upon the total number of FTE enrollees and the total valuation of these districts fell at the $131,946 level.

Subsequent to the analysis above, an analysis of the sources of revenue for the "selected" junior college districts is necessary. Basically, Missouri junior colleges receive funds from four sources: (a) state and local taxes (this is the local taxpayers share); (b) student fees; (c) state aid and appropriations; and (d) other sources (e.g., special government grants, private gifts and grants, endowment earnings, investment income, student activities income, and sales of educational departments and other income).[2] The relationship of these four sources to the total revenue of the institution is presented in Table 17 (actual amounts may be found in Appendix G).

The analysis of the 1966-67 revenues for "selected" junior college districts (Table 17) revealed that the source of the largest percentage of the revenue varies among institutions. The two smaller institutions raise almost 50 per cent from taxes, Jefferson raises slightly more than one-third from taxes and one-third from state aid and appropriations, Missouri Western collected two-fifths in state aid and one-third in taxes, while Missouri Southern garnered approximately two-fifths from "other sources" and slightly less than one-third from taxes. (Missouri Southern is engaged in a large campus

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[2]These are the categorical listings found in the annual financial report required by the Missouri Department of Education.

TABLE 17.--Relationship, expressed in percentages, of the four major sources, the Revenue Source Index, to the total revenue 1966-67 for the "selected" junior college districts.

Junior College	State and Local Taxes	Student Fees	State Aid and Appropri-ations	All Other Income
Crowder	49.2	12.7 (C_{50})	25.8	12.3
Mineral Area	46.2	9.3	27.2 (C_{50})	17.3
Jefferson	36.0 (C_{50})	14.1	34.0	15.9 (C_{50})
Missouri Western	33.4	20.9	40.2	5.5
Missouri Southern	29.8	12.4	19.5	38.3
	$\bar{X}$ = 38.9	$\bar{X}$ = 13.9	$\bar{X}$ = 29.3	$\bar{X}$ = 17.9

Source: Missouri State Department of Education.

development project which included federal grants of considerable size in the category "all other income".)

Analyzing the four sources of income in terms of the measure of central tendencies, the medians (C_{50}) fell 1 or 2 percentages below the computed means ($\bar{X}$) for each category. The means suggest that 39 per cent of the revenue be raised by taxes, 14 per cent be charged to students, 29 per cent be derived from state aid and appropriations, and 18 per cent be solicited from other sources.

In addition to the consideration of the source of revenue, the method or schema for collecting from certain

of the sources can be analyzed. Two factors enter into the financial picture at this point, tax levy rates and student fee rates.

Tax levies are authorized by the 1961 enabling legislation based upon the total assessed valuation of the district, however, this authorized levy may be exceeded upon a favorable vote of the people. Several of the districts have received such favorable votes.

Student fees are assessed according to a designation of four categories: (a) residents of districts, entitled to state aid (residents entitled); (b) residents of districts, not entitled to state aid (residents not entitled); (c) non-residents of district, entitled to state aid (non-residents entitled); and (d) non-residents, not entitled to state aid (non-residents not entitled). Table 18 presents the data on each of the categories and on the tax levies previously mentioned.

The tax levy information in Table 18 reveals that the smaller institutions have remained within the authorized tax limitation while Missouri Western and Missouri Southern have increased the levy by 50 per cent or more. As a result the actual mean of the levies is 8.6 cents higher than the mean of the legislatively authorized levies.

Student fees demonstrated a considerable range with Missouri Southern registering as lowest in every category

TABLE 18.--Data relative to taxation levies and student fees charged in the "selected" junior college district of Missouri.[a]

Junior College	Authorized Tax Levy	Actual Levy	Rates of Student Fees			
			Resident Entitled	Resident Not Entitled	Non-Resident Entitled	Non-Resident Not Entitled
Crowder	$.40[b]	$.40[b]	$110	$350	$418	$658
Mineral Area	.40	.40 (C_{50})	263	503	554	794
Jefferson	.30 (C_{50})	.30	120 (C_{50})	360 (C_{50})	440 (C_{50})	680 (C_{50})
Missouri Western	.30	.58	148	388	472	715
Missouri Southern	.30	.45	100	340	295	535
	$\bar{X}$ = $.34	$\bar{X}$ = $.426	$\bar{X}$ = $148	$\bar{X}$ = $388	$\bar{X}$ = $436	$\bar{X}$ = $676

[a]Source: Missouri State Department of Education.

[b]Levy stated in terms of cents per one hundred dollars tax valuation.

and Mineral Area rating as highest. In the two categories of resident students, the difference between these two institutions was $163 per year, whereas, for non-resident students the difference in both categories was $259. The average fee per year for the categories were: $148 for residents entitled to state aid; $388 for residents not entitled to state aid; $436 for non-residents entitled to state aid; and $676 for non-residents not entitled to state aid. Missouri Western charged fees of residents which were exactly at the average for both categories, while Jefferson College most closely approximated the mean for non-resident categories exceeding by $4 in both categories.

The factors presented above were statistically treated for testing relationships among themselves and with one other factor, FTE enrollment size. The same statistical method, Kendall's Tau, was employed with these factors as was utilized in Chapter V dealing with potential enrollment. Table 19 presents the rank orders by institution for each of the factors for the convenience of the reader.

Correlations (Table 19)

The correlation coefficient for the relationship of "FTE enrollment" to the per cent of revenue derived from "state and local taxes" was -1.00 which was significant at the .0083 level.

TABLE 19.--Institutional rank order for the factors discussed in the analysis of sources of revenue for the "selected" junior college districts in Missouri (1966-67).

Junior College	Assessed Valuation	Assessed Valuation Per FTE Enrollee	Revenue Source Index				Rate of Student Fees[a]	FTE Enrollment
			State & Local Taxes	Student Fees	State Aid & Appropriations	All Other Sources		
Crowder	1	3	5	3	2	2	2	1
Mineral Area	2	2	4	1	3	4	5	2
Jefferson	3	5	3	4	4	3	3	3
Missouri Western	5	4	2	5	5	1	4	4
Missouri Southern	4	1	1	2	1	5	1	5

[a]The four categories of fees all portrayed the same rank order.

NOTE: The reader is reminded that Three Rivers Junior College was not in operation in 1966-67 and, therefore, can not be included in this analysis. Current year data will not be available until after July 1, 1968.

The correlation coefficients for the relationship listed below was .80 which was significant at the .042 level.

a. "FTE enrollment" to "assessed valuation." (A negative relationship of the same magnitude exists for.)

b. "Assessed valuation" to the per cent of revenue derived from "state and local taxes."

The correlation coefficient for the relationships listed below was .60 which was significant at the .117 level.

a. "Assessed valuation per FTE enrollee" to the per cent of revenue derived from "student fees."

b. "Assessed valuation per FTE enrollee" to the per cent of revenue derived from "state aid and appropriations."

c. "Rate of student fees" to the per cent of revenue derived from "state aid and appropriations."

All other correlation coefficients fell below .60 with less than .117 significance level. Other relationships tested were:

a. "FTE enrollment" to the "valuation per FTE enrollee."

b. "FTE enrollment" to the per cent of revenue derived from "student fees."

c. "FTE enrollment" to the per cent of revenue derived from "state aid and appropriation."

d. "FTE enrollment" to the per cent of revenue derived from "all other sources."

e. "FTE enrollment" to the "rate of student fees."

f. "Assessed valuation" to the per cent of revenue derived from "student fees."

g. "Assessed valuation" to the per cent of revenue derived from "state aid and appropriations."

h. "Assessed valuation" to the per cent of revenue derived from "all other sources."

i. "Assessed valuation" to the "rate of student fees."

j. "Assessed valuation per FTE enrollee" to the per cent of revenue derived from "state and local taxes."

k. "Assessed valuation per FTE enrollee" to the per cent of revenue derived from "all other sources."

l. "Assessed valuation per FTE enrollee" to the "rate of student fees."

m. "Rate of student fees" to the per cent of revenue derived from "state and local taxes."

n. "Rate of student fees" to the per cent of revenue derived from "student fees."

o. "Rate of student fees" to the per cent of revenue derived from "all other sources."

Interpretations and Observations

The most statistically significant correlation indicated that as enrollment increased, the per cent of revenue contributed by "state and local taxes" (which is the combination of local property tax and utilities taxes) decreases. The relationship between "FTE enrollment" and "assessed valuation" showed a relatively high degree of correlation as is commonly assumed in the development of minimum requirements for assessed valuation found in many state criteria. However, it may be important to note that the correlation was not perfect.

Although the reason is not entirely clear, there was a definite positive correlation between the "assessed valuation per FTE enrollee" and the per cent of revenue derived from "state aid and appropriations" indicating that as the amount of valuation available to support a student increases the percentage of cost provided by state aid increases. Equally as perplexing is the relationship which indicated that as "assessed valuation" increases, the percentage of the cost derived from the taxes on that valuation decreases. It was the purpose of this research to uncover relationships of this type, however, it is beyond the intended scope of this study to analyze such relationships in detail.

Of those relationships for which low correlations were discovered, one seems very curious. That is, little if any correlation exists between the amount charged students in fees and the per cent of revenue such fees provide. This again is a finding which will not be pursued in more specific detail.

Operational Expenditures

In visitations to the junior colleges of Missouri and in the interviews with the administrators, especially the business managers, it was discovered that a detailed analysis of expenditures based upon the official reports sent to the State Department of Education would not produce meaningful or comparable data from one institution to another. The reason for this is a multiplicity of accounting procedures (which will be revised as a result of the adoption of "uniform accounting procedures" in 1968).[3] Therefore, upon the advice of the interviewees, the only data considered as comparable are the total expenditures and a computed "per capita expenditure" for operation. These elements are presented in Table 20.

Table 20 reveals an increase in total expenditure with the increase in size of the institution as logically would be expected. The average expenditure ($\bar{X}$) for the

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[3]Missouri State Department of Education, Missouri Uniform Accounting Procedures for Public Junior Colleges (Jefferson City, Mo.: Missouri State Department of Education, 1968).

TABLE 20.--Data on the operational expenditures of the "selected" junior college districts in Missouri.[a]

Junior College	Total Expenditures 1966-67	Per Capita Expenditures 1966-67
Crowder	$349,444	$836
Mineral Area	504,821	711 (C_{50})
Jefferson	596,292 (C_{50})	888
Missouri Western	618,430	650
Missouri Southern	652,585	607
	$\bar{X}$ = $544,314	$\bar{X}$ = $738

[a]Source: Missouri Commission on Higher Education

institutions studied was $544,314, while the median total expenditure (C_{50}) was that of Jefferson College, $596,292.

A study of "per capita expenditure" indicates a difference of $281 expenditure per FTE enrollee between the $607 level at Missouri Southern and the $888 expenditure at Jefferson College. The mean per capita expenditure ($\bar{X}$) was $738 which was most closely approximated by Mineral Area at $711, the median ($C_{50}$) for the expenditures.

In order to study the relationship of the "per capita expenditure" to several factors from earlier portions of this research, Table 21 presents the rank order by institution as a convenience to the reader.

TABLE 21.--Institutional rank order for the several factors proposed as being related to "per capita cost" for the "selected" junior college districts of Missouri (1966-67).

Junior College	Per Capita Expenditure	Comprehensiveness Index		Revenue Source Index				FTE Enrollment
		Transfer	Career or Special Un-Classified	State & Local Taxes	Student Fees	State Aid & Appropri-ations	All Other Sources	
Crowder	4	1	5	5	3	2	2	1
Mineral Area	3	3	3	4	1	3	4	2
Jefferson	5	2	4	3	4	4	3	3
Missouri Western	2	4	2	2	5	5	1	4
Missouri Southern	1	5	1	1	2	1	5	5

Correlations (Table 21)

The correlation coefficient for the relationship of "per capita expenditure" to the per cent of enrollment as "career or special-unclassified" students was .80 which was significant at the .042 level.

Conversely, the relationship of "per capita expenditure" to the per cent of enrollment as "transfer" students had a negative coefficient of .80 at the same level of significance.

The correlation coefficient for the relationship of "per capita expenditure" to the per cent of revenue derived from "state and local taxes" was .60 which was significant at the .117 level.

The correlation coefficient for the relationship of "per capita expenditure" to the "FTE enrollment" was a negative .60 which was significant at the .117 level.

All other correlation coefficients fell below .60 with less than .117 significance level. Relationships tested were:

a. "Per capita expenditures" to the per cent of revenue derived from "student fees."
b. "Per capita expenditure" to the per cent of revenue derived from "state aid and appropriations."

c. "Per capita expenditures" to the per cent of revenue derived from "all other sources."

Interpretations and Observations

A significant relation was portrayed between the development of programs outside the "transfer" curricula and the rise in "per capita expenditures." The negative relationship between "FTE enrollment" and "per capita expenditure" tends to suggest that costs per student will decline as enrollment increases. The relationship between "per capita expenditures" and the per cent of revenue derived from "state and local taxes" indicates that as "per capita expenditures" rise the tax levy must provide a greater share of the cost.

Capital Outlay

An analysis of the type conducted in previous sections of this chapter is virtually impossible regarding capital outlay because of the unique conditions existing at each of the several institutions. Capital outlay expenditures are sporadic by nature and the intermittent activities and revenue requirements do not lend themselves to the determination of group norms or other statistical treatment. Therefore, each institution will be described individually in this section.

Crowder College

The junior college district board of trustees received ownership to two permanent buildings on the Camp Crowder Military Reservation which have been renovated for use as instructional facilities. In addition they were awarded a number of housing units (some are used as dormitories, others as faculty and married student apartments, and other single dwellings are rented to faculty) and a great deal of land. The district is seeking voter approval for additional buildings on the campus.

Mineral Area Junior College

This institution shares facilities with the Flat River High School. A new campus is in the planning stage and construction should begin during the current year.

Jefferson College

This junior college has a new campus with four structures completed and two others in various stages of construction.

Missouri Western College

This institution is currently housed in an old high school building but has a new campus under construction. The new campus will house both the junior college and a two-year senior institution, if present plans of the administration come to fruition. Each institution, the

junior college and senior college, are governed by separate legal boards of trustees. (The junior college board is elected, the other is appointed by the Governor. At this time, the same individual serves on both boards.)

Missouri Southern College

This is another case of two institutions using the same campus. Again there are two boards, with the same individuals serving on both. This institution is located on a new campus with four completed structures with several others in stages of planning.

Three Rivers Junior College

This junior college opened for the first time last summer in an old high school building which it leases from a local building and loan association. Plans for location of a new campus are in progress, however, the current plans call for use of present facilities for the next five years.

The interesting and unique features described briefly above do not lend themselves in any manner to the development of comparisons or predictions in this most important phase of financing. Therefore, no predictive factors related to capital outlay will be attempted in this study. A composite of the plant value and other pertinent information is presented in Appendix H for the interested reader.

Summary

The major concerns in Chapter VI were factors which contribute to a determination of financial support necessary to the establishment from two points of view: (a) revenue, and (b) operational expenditures. A third point of view, capital outlay, was investigated, however, sparsity of data and unique problems of the "selected" districts made any meaningful discussion virtually impossible.

The treatment of data in this chapter was similar to that employed in Chapter V. The data on the "selected" junior college districts were analyzed through the use of descriptive statistical techniques. The relationships between the various factors were tested by use of Kendall's Order Correlation (Kendall's Tau).

1. The results of the analyses of revenue in this chapter were:
    a. Total "assessed valuation" of the "selected" junior college districts ranged from $51,000,000 to $163,500,000 with an average of $118,320,000.
    b. "Assessed valuation per FTE enrollee" ranged from $90,580 to $192,408 while the average was $138,620, in the "selected" junior college districts.
    c. The Revenue Source Index indicated:
        (1) That districts with smaller FTE enrollments derived nearly 50 per cent of

their revenue from local property tax and state utility taxes while the largest "selected" junior college district derives 30 per cent. The average for the "selected" districts was 38.9 per cent.

(2) Student fees provide from 9.3 to 20.9 per cent of revenue with the average being 13.9 per cent.

(3) State aid and appropriations provide from 19.5 to 40.2 per cent of revenue with an average of 29.3 per cent.

(4) All other sources provide revenues equalling from 5.5 to 38.3 per cent, an average of 17.9 per cent was computed.

d. Tax levies authorized in the Enabling Act of 1961 ranged from $.30 to $.40 per one hundred dollars assessed valuation. Actual levies including additional voted taxes ranged from $.30 to $.58 with an average levy of $.426.

e. Rates of student fees varied considerably among the "selected" junior college districts. Fees charged of residents of the district indicated a difference of $163 from lowest to the highest, while the difference for non-residents was $259. The average of fees charged were:

(1) Residents for whom the junior college was entitled to state aid--$148.

(2) Residents for whom the junior college was not entitled to state aid--$388.

(3) Non-residents for whom the junior college was entitled to state aid--$436.

(4) Non-residents for whom the junior college was not entitled to state aid--$676.

The same array of rank order was found for all four categories.

f. Significant correlation coefficients were computed for the following relationships:

(1) "FTE enrollment" to the per cent of revenue derived from "state and local taxes" (property tax) coefficient -1.00, significant at the .0083 level.

(2) "FTE enrollment" to the total "assessed valuation." Coefficient .80, significant at the .042 level.

(3) "Assessed valuation" to the per cent of revenue derived from "state and local taxes" (property tax) Coefficient -.80, significant at the .042 level.

2. The results of the analyses of operational expenditures in this chapter were:

a. Total expenditures for operation were arrayed in the same order as FTE enrollment size as one would expect. The average total expenditure for the "selected" junior college districts was $544,314. Thus all correlation coefficients computed for FTE enrollment would similarly apply to total expenditures.

b. Per capita expenditures ranged from $607 to $888, a difference of $281, while the average was $738. As this seemed a more discriminating measurement, this element was analyzed with several factors drawn from previous investigations in this chapter and Chapter V, namely the Revenue Source Index and Comprehensiveness Index.

c. A significant correlation coefficient was computed for only one relationship, that is "per capita expenditures" to "career or special-unclassified" program enrollment. Coefficient .80, significant at the .042 level.

Since "transfer" program enrollment is a converse mathematical function of the same computation, the same magnitude of correlation, with a similar significance level, was derived, but in a negative direction.

3. Capital outlay expenditures did not lend themselves to an analysis of the type performed above because of the unique circumstances at the "selected" junior college and the sporadic activity in this type of expenditure.

Suggestions for Presentation of Data Relative to Item 12 Extent of Local Resources for Financing the Community Junior College

In order to portray the financial support capabilities of a proposed district, specific data should be provided:

1. Describing the district in financial terms, on a school district by school district basis, and indicating the proposed district totals where appropriate.
   a. Total assessed valuation of:
      (1) Property within the proposed district.
      (2) Utilities within the proposed district.
   b. Bonded indebtedness.
   c. Current tax levies.
2. Presented in other portions of the application:
   a. The potential enrollment derived through use of the Texas Research League Formula (Item 4).
   b. The program needed in the junior college (Item 5).

3. Derived from the experiences of existing junior colleges:
    a. Per capita expenditures.
    b. The per cent of revenue provided by:
        (1) State and local taxes.
        (2) Student fees.
        (3) State aid and appropriations.
        (4) All other income.

The information should be utilized in determining the operational financial requirements based upon the projected enrollment and the appropriate per capita expenditure. The resultant financial requirements should then be analyzed in terms of what amount must be provided by each of the four major sources of revenue. The capability of the district to derive the necessary monies from each source should then be analyzed and presented in narrative and tabular form.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter the study will be reviewed and interpreted in terms of the design and conduct of the research, the analysis of the data, and recommendations for application of the findings. The development of this chapter is based primarily upon the objective data of the analyses, however, the author takes the liberty of drawings upon his personal observations and impressions following a year's work with the institutions of higher education in the State of Missouri.

Summary

Purpose of the Study

It has been the purpose of this research to: (a) examine proposals for establishment of new or expanded junior college districts, since 1961, and the actual developments at these institutions in terms of meeting the needs identified in the proposal for establishment, in achieving and maintaining the predicted enrollment, and in adequately financing the proposed junior college; (b) to develop systematic procedures for reconciling any discrepancies; and (c) to identify, from the experience

of existing junior colleges, any other salient variables which should be encompassed in the criteria and/or made a part of this application.

Limitations of the Study

Since it is the purpose of this study to provide guidance to future development of junior college districts in Missouri, the institutions "selected" for study were six which are similar by nature and characteristics to the area of the state not currently within a junior college district. More specifically, the very large junior college districts of Kansas City and St. Louis were excluded from detailed consideration because they represent enrollment potentials and assessed valuations beyond the capability of any future junior college district. Similarly, Trenton and Moberly Junior College Districts were not included because they represent a limitation of enrollment and assessed valuation which is neither encouraged or approved as a basis for future districts by the Missouri State Board of Education. Two other junior college districts, State Fair Community College at Sedalia and the East Central Missouri Junior College District are not yet in operation and therefore were excluded from the study.

Review of the Literature

The amount of literature pertinent to this study was voluminous, and historic, as studies concerned with

criteria for establishment of junior colleges date back to the early portion of this century. The review of the literature was divided into three areas:

1. Literature related to the need for the study of Missouri public junior colleges.
2. Literature related to the development of establishment criteria in general.
3. Literature related to establishment criteria for Missouri.

The need for the study of Missouri public junior colleges was portrayed in official governmental studies which called for the provision of a master plan, clarification of the role, tax structure reform, state aid formula improvement, and capital outlay aid; all of which are related to the establishment of viable junior college districts in Missouri. The evidence found in the literature of this portion of the review served to justify the purpose of this research project.

In the review of the literature relative to establishment criteria in general, an historical perspective of such criteria, is developed on the basis of writings of previous authorities. Thus has been developed a concensus, or at least a thread of acute similarity, throughout this literature, which seems extremely limited, or perhaps even naive, in view of this author's observations of Missouri public junior colleges. Most naive, in the author's

impressions, is the recurring advocation of a two hundred student enrollment for a "comprehensive" junior college. The word "comprehensive" loses all meaning when used in this context.

Most significant of the studies reviewed in this section were those which based their recommendations on a systematic analysis of the experiences of existing junior colleges. These studies recommended minimum enrollment ranging from 1,000 to 3,000 FTE enrollees to provide "comprehensiveness" in a junior college.

This portion of the review also provided the basic constructs for the analyses conducted in the study. Most important to the application analysis were the twelve items included in Principle II as suggested by the American Association of Junior Colleges' Commission on Legislation.

Of greatest importance to the analysis of enrollment potential was the isolation of four primary factors utilized in projecting enrollment potential: total population, high school enrollment; high school graduates; and eighteen-nineteen year olds population. These factors served as the basic framework for analyses in Chapter V.

In the literature relative to establishment criteria for Missouri, two studies were most significant. Dr. Charles McClain set about to accomplish the same task as this study, however, his approach was based upon the

compilation of expert opinion and did not consider the experiences of existing Missouri public junior colleges. In terms of enrollment potential, McClain arrived at four hundred student enrollment as his criterion. McClain's financial ability criterion was presented as a $600 per annum minimum support per student comprised of 35 per cent state aid, 30 per cent local tax support, and 35 per cent student tuition or fee contribution.

A study recently completed by Dr. Richard L. Norris, analyzed the breadth of transfer program offerings in Missouri public junior colleges to FTE enrollment. His conclusions indicated that a minimum enrollment of four hundred FTE students is necessary for a sufficiently broad transfer program alone. His observations tend to confirm this author's observations regarding the relationship of enrollment to comprehensiveness. No other studies, directly related to this research, were evident in the examination of literature of Missouri public junior colleges.

Conduct of the Study

This study was concerned with the analysis of applications submitted for establishment of the six "selected" junior college districts, analysis of methodologies for estimating potential enrollment for proposed districts based upon the experience of existing junior colleges, and the analysis of financial support necessary for

proposed district as indicated by the existing districts' experiences.

The primary sources of information for the three analyses mentioned above were:

1. The review of literature which provided constructs for organization of the analyses, and examples of the application of establishment criteria, as used by authorities in the junior college field.
2. The applications submitted to the Missouri State Department of Education by each of the public junior colleges established since the Enabling Act of 1961.
3. Visitations to and interviews with the administrators of each of the institutions included in the analyses.
4. Reports, records and studies conducted by the Missouri State Department of Education and the Missouri Commission on Higher Education (the author has frequently interviewed personnel of these agencies regarding material presented in this study).

The presentation of data was designed to portray existing conditions through the use of descriptive statistics, mean and median, while relationship between variables developed in the analyses are computed as

correlation coefficients employing Kendall's Rank Order Correlation (Tau) and Kendall's Coefficient of Concordance:W (both nonparametric statistical techniques).

Findings

1. The "selected" junior college district applications analyzed did not clearly indicate the "need" for the establishment of a junior college in the proposed areas. Little, if any, documentary evidence was provided to portray the unique needs of the particular area. Where substantiated data was provided, it was not systematically tied to a depiction of need.
2. The only detailed study conducted in any of the districts to substantiate need, interest and support was a survey of the educational aspirations of high school seniors. The questionnaire used (see Appendix C) was considered by the author to be superficial, misleading, and lacking in discriminative ability.

   None of the other common surveys of: parents; recent high school graduates; or business-industry; were conducted prior to the application for establishment of the "selected" junior college district.

3. Eight of the twelve items proposed by the American Association of Junior Colleges' Commission on Legislation were treated in the applications of the "selected" junior college districts, while four received no mention.
   a. Items most frequently presented:
      (1) Socio-economic and population description of the proposed districts.
      (2) Maps showing road systems, population centers, and commuting routes to a proposed campus center. (No indication of topography was included.)
      (4) Prospective community-junior college students.
      (5) Programs needed in the community-junior college.
      (6) Post-high school programs now available in the area to be served.
      (8) Facilities and/or sites available which may be used either temporarily or permanently by the college.
      (7) Community attitudes--evidence of community support (no indication of community hostility or indifference was presented).
      (12) Extent of local resources for financing the community-junior college.

b. Items not included were:

(3) Follow-up studies of high school students in previous years.

(4) Programs of high school level in the area.

(9) Guidance now available.

(10) Teaching staff available.

The items most satisfactorily presented were Item 4 and Item 11, while Items 1, 2, 4, and 12 were most frequently treated.

4. The applications for the establishment of St. Louis-St. Louis County Junior College District and Metropolitan Kansas City Junior College Districts, which were based upon studies directed by professional consultants, both exhibited greater sophistication and more convincing portrayals of need than any of the applications of the "selected" junior college districts.

5. The analysis of the four factors commonly employed in estimating potential enrollment produced the following findings:

a. FTE enrollment of the "selected" districts approximates 1.2 per cent of the total population which is less than the 3.3 per cent implied in the Illinois criterion. However, correlation coefficient of this factor to

FTE enrollment is .467 (significant at the .136 level).

b. The ratio of FTE enrollment to high school enrollment (grades nine-twelve) was about 20 per cent, with a correlation coefficient of .467, significant at the .136 level (all the "selected" junior colleges considered) and .60, significant at the .042 level (Three Rivers deleted). This compared favorably with the implicit criterion of Iowa, but was below the standard as employed in Florida.

c. The proportion FTE enrollment was of the "population eighteen-nineteen years old" was 34 per cent, approximately that ascribed to Michigan junior colleges in 1965 by Dr. J. F. Thaden. With all "selected" junior college districts considered, a correlation coefficient of .60, significant at the .068 level was computed to describe the relationship of FTE enrollment population eighteen-nineteen years old. The same coefficient was computed when Three Rivers was deleted, however, the significant level became .042.

d. FTE enrollment was found to be related to high school graduates with a correlation

coefficient of .60, significant at the .068 level, all "selected" districts, considered. When Three Rivers was deleted the correlation coefficient was .80 at the .042 significance level. (The application of this variable was included in the Texas Research League formula discussed in Finding 6, next).

6. A formula for estimating potential enrollment has been developed by the Texas Research League. The formula has four computational steps which are based upon percentage relationships of:
   a. First-time enrollees, resident of the district to high school graduates of the district.
   b. First-time enrollees, resident of the district to total first-time enrollees.
   c. Total first-time enrollees to head count enrollment, and
   d. FTE enrollment to head count enrollment.

   Using Kendall's Coefficient of Concordance:W, a statistical test of the relationship between all five variables. A coefficient of concordance of .941, six "selected" junior colleges considered, and .968, Three Rivers deleted, were computed significant beyond the .01 level.

   Based upon the experience of the five older "selected" districts, the following relationships were computed:

a. First-time enrollees, residents of the district, are approximately 40 per cent of the high school graduates of the district.

b. First-time enrollees, residents of the district, are approximately 80 per cent of the total number of first-time enrollees.

c. Total first-time residents is approximately 45 per cent of head count enrollment.

d. FTE enrollment is approximately 85 per cent of head count enrollment.

7. An analysis of the Program Comprehensiveness Index indicates that size of FTE enrollment does not tend to produce comprehensiveness. The percentage of students enrolled in "career or special-unclassified" programs relates to FTE enrollment with a correlation coefficient of -.80 which is significant at the .042 level.

8. Total "assessed valuations" of the "selected" junior college districts ranged from $51,000,000 to $163,500,000, with an average of $118,320,000.

9. Assessed valuation per FTE enrollee ranged from $90,580 to $192,408 in the "selected" junior college districts while the average was $138,620.

10. The "selected" junior college districts of Missouri receive approximately 39 per cent of

their income from "state and local taxes" which are primarily the local property tax and the state utility tax levied upon utilities within the local district. Both taxes represent the tax burden on local property owners. Student fees contribute about 14 per cent, state aid and appropriations 29 per cent, and all other sources 18 per cent.

11. The tax levies authorized by the 1961 Enabling Act range from $.30 to $.40 per one hundred dollars assessed valuation in the "selected" junior college districts. The actual levies including additional voted taxes range from $.30 to $.58 with an average levy of $.426.

12. Fees assessed to students differed from institution to institution by as much as $163 dollars for residents and $259 for non-residents. The average fees charged by the "selected" junior colleges were:

    a. Residents for whom the junior college was entitled to state aid--$148.

    b. Residents for whom the junior college was not entitled to state aid--$388.

    c. Non-residents for whom the junior college was entitled to state aid--$436.

    d. Non-residents for whom the junior college was not entitled to state aid--$676.

The same array of rank order was found for all four categories.

13. Among the "selected" districts, the following significant correlations were computed:
    a. As "FTE enrollment" size increases the percentage of revenue derived from "state and local taxes" (property tax) decreases (computed correlation coefficient -1.00, significance level .0083).
    b. "FTE enrollment" size and "assessed valuation" are related (computed correlation .80, significance level .042).
    c. As the "assessed valuation" of districts increase the per cent of revenue derived from "state and local taxes" (property tax) decreases (computed correlation coefficient -.80, significance level .042).
14. The "total expenditures" for operation for the "selected" junior college districts ranged from $349,444 to $652,585 with an average of $544,314. The increase in FTE enrollment produced an increase in total expenditures for operation as would be expected.
15. Per capita expenditures ranged from $607 to $888, a difference of $281, while the average was $738. The rank order array varied considerably from "FTE enrollment" or "total expenditures" rank orders.

16. The most significant correlation was found to exist between "per capita expenditure" and "career and special-unclassified" program enrollment. A converse relationship of the same magnitude existed between "per capita cost" and "transfer" program enrollment. Computed correlation coefficient were .80 for the first relationship and -.80 for the second, both significant at the .042 level.

Conclusions

The following conclusions are drawn based upon the findings presented above.

1. The applications presented for establishment of the "selected" junior college districts of Missouri did not present a clear case for approval of the establishment of the district because:
   a. They lacked documentary or substantiating evidence for statements made in the application.
   b. In circumstances where substantiated data was presented, it was not drawn in a manner to depict need.
   c. Detailed studies of parents, recent high school graduates, or business-industry were not conducted, while the high school senior survey was too superficial and misleading.

d. Only eight of twelve items, suggested by the American Association of Junior Colleges for inclusion in such surveys, were treated in any manner.

e. The application lacked the sophistication and thoroughness exemplified by the surveys conducted by professional consultants.

2. In the prediction of enrollment potential, no systematic projection technique was utilized. However, the findings of this study, based upon conditions in the "selected" junior college districts of Missouri in 1967-1968, indicate:

a. The factor most closely related to potential enrollment is the "number of high school graduates." When this factor is applied through the use of the Texas Research League Formula modified by Missouri data it provides the closest estimation of potential enrollment.

b. The factor which provides the second best relationship is the "population eighteen-nineteen years old."

c. The factor which provides the third best relationship is the "high school enrollment" (grades nine-twelve).

d. The factor which provides the poorest relationship is "total population" in Missouri in 1967-68.

3. In the "selected" junior college districts in Missouri, increased enrollment size does not necessarily produce a comprehensiveness of program offerings.
4. Based upon the experience of existing junior colleges, a new junior college district may expect to derive about 39 per cent of its revenue from local property and state utilities taxes, 29 per cent from state aid, 14 per cent from student fees, and 18 per cent from all other sources.
5. It appears that districts with smaller enrollment size and lower assessed valuation will have to provide a larger per cent of revenue from local property taxes and state utilities taxes.
6. The new district can expect to levy at least $.40 per hundred dollars assessed valuation.
7. Residents of the new junior college districts will pay approximately $148 to $388 per year in fees while non-residents will pay approximately $436 to $676 per year in fees and tuition.
8. The relationship between enrollment size and per capita expenditure is not significant. However, an increase in the per cent of students enrolled in career or special-unclassified

programs is closely related to increased per capita expenditures.

Recommendations

The analysis of the applications, the analysis of enrollment potential, and the analysis of financial support all point toward the need for a systematic presentation of data which clearly portrays the need, enrollment potential, and financial adequacy of any proposed district. The following format is suggested as a basic presentation of data. The ingenuity and creativeness of the citizen's committees and, more particularly, those charged with responsibility for writing future applications may expand far beyond what is suggested here. Admittedly, the research required to fulfill the requirements of this format will take a considerable amount of time and effort beyond that expended upon previous applications. However, it seems that the establishment of a quality community junior college merits such an effort.

FORMAT: Survey for the Establishment of a Junior College District

The major purpose of this survey method is to indicate procedures for developing junior college programs not only appropriate to current needs, but with a commitment toward and an anticipation of the individual and community needs of the future.

I. Socio-economic and Population Descriptions of the Proposed District.

A. An historical presentation of population trends in the proposed district.

Sources: U. S. Bureau of the Census

B. Population projections including methodology or rationale for the prediction.

Sources: University of Missouri
Public Utility Firms
Independent or governmental research studies

C. Descriptions, including trends, of population composition and characteristics.

1. Age
2. Sex
3. Economic conditions
4. Educational conditions
5. Employment conditions
6. Rural-urban residence
7. Stability of residence

Sources: U. S. Bureau of the Census
State and local agencies

D. Business and industrial growth trends and projections.

Sources: U. S. Bureau of the Census
Chamber of Commerce
State and local agencies
Independent and governmental research and studies

E. Any other factors which depict the realities of living in the proposed district.

II. Maps Showing Topography, Road Systems, Population Centers and Main Commuting Routes to a Proposed Campus.

A. Separate maps clearly depicting:

1. Boundaries of the district, the geographic center, the population center, and communities.
2. Road networks as related to the elements of the first map and topographical barriers.
3. Business and industries employing fifty to more people (used as reference for Items I and V).
4. Secondary and post-secondary educational institutions within the district.
5. Post-secondary institutions within a fifty-mile radius of the district and possible area to be annexed to the district at a later time.

B. Narrative presentations describing:

1. Size and topographical influences.

2. Legal composition of the district.
3. Constituent school districts by county.
4. Accessibility of the proposed college to potential students.

III. Follow-up Studies of High School Students in Previous Years.

A. A survey of former high school students of the proposed district should be conducted to:

1. Determine educational and employment patterns following high school.
2. Assess the value of the high school training in preparation for post-high school experience.
3. Survey opinions of graduates on the need for post-high school educational opportunity in their home community.

IV. Prospective Community Junior College Students.

In estimating enrollment potential, the sponsors of the application should present a range based upon four bases: (a) total population; (b) high school enrollment grades nine-twelve; (c) population eighteen-nineteen years old; and (d) high school graduates. These factors should be presented for the five years preceding the year of application and projected for five years into the future.

In tabular presentations for each of the first three factors, the computational ratio, such as those

found in Chapter V, should be applied to the data. For example, based upon the data analyzed in this study, the following computation would provide an estimate of potential enrollment:

A. Total population multiplied by .012 (the per cent of total population equal to the FTE enrollment of the average "selected" junior college district).
B. High school enrollment grades nine-twelve multiplied by .20 (the per cent of district high school enrollment equal to the FTE enrollment of the average selected junior college district).
C. Population eighteen-nineteen years old multiplied by .34 (the per cent of eighteen-nineteen year olds equal to the FTE enrollment of the average "selected" junior college district).

The resultant projections of these three factors may be viewed as increasing in co-relationship to enrollment of the proposed junior college. (The estimation of FTE enrollment using all three of these methods should provide a more sensitive range of enrollment potential based upon the unique characteristics of the population to be served.)

The fourth factor, high school graduates should be employed in computation of the Texas Research League Formula for estimating enrollment. Since the factor and this formula were found to be more highly

correlated to actual enrollment than the other three factors, the results of this computation should provide the basis for cost estimates in Item XII and should serve as the official estimate of potential enrollment for consideration of the application.

Based upon the findings of this study, the Texas Research League Formula is computed as follows:

A. The number of high school graduates multiplied by .40 to derive the number of resident first-time enrollees.

B. The resultant product of A divided by .80 to determine the total number of first-time enrollees.

C. The resultant dividend of B divided by .45 to determine total head count.

D. The resultant dividend of C multiplied by .85 to determine the estimated FTE enrollment.

All of the percentages utilized in the computation above should be up-dated annually by the approving agency to reflect the current patterns of attendance in the junior colleges of the state.

V. Programs Needed in the Junior College District.

A. Business and Industry Surveys should be conducted to determine, for both the present and future:

1. The nature and training necessary for entry occupations in the area.

2. The extent of training local firms desire for their employees

3. The degree of interest and support on the part of local firms.

B. The other surveys suggested previously (students, parents, and former students) should provide information for making projections relative to:

1. The type of training or education desired.
2. Patterns of mobility to suggest other labor markets which must be considered.

VI. Post-high Programs Now in the Area to be served.

A. Utilizing the maps suggested in Item II as references, narrative descriptions should be drawn to portray:

1. The nature and location of institutions of higher education.
2. The accessibility of the institution to potential students of the proposed district.
3. The programs offered at the institution.
4. Current and projected attendance patterns of residents of the junior college district.

VII. Program of High School Level in the Area.

A. An examination of each of the district high schools should be presented (to establish clear procedures for articulation) in narrative depicting:

1. Enrollment by program (e.g., college preparatory, general, business, etc.).
2. Vocational-education courses available.
3. High school completion programs for adults.
4. Guidance and counseling available.

VIII. Facilities and/or Sites Available Which May Be Used Either Temporarily or Permanently by the College.

A. Through reference to maps suggested in Item II and in narrative, all potential facilities and/or sites should be discussed in relation to:

1. Location
2. Type of facility:
    a. Building, nature and usable space of the structure.
    b. Condition at present and necessary renovation.
3. Terms or conditions of purchase or lease, accompanied by letter of intent from owner or responsible agent whenever possible.

IX. Guidance Facilities Now Available.

A. A narrative description of the availability of guidance services in the district should include:

1. Reference to high school guidance services cited in Item VII.
2. Employment or occupational guidance.
3. Welfare or economic opportunity guidance.
4. Other public or private agencies serving the guidance function.

Whenever possible, the agencies described above should provide a statement describing the assistance the proposed junior college could provide to them in fulfillment of their duties.

X. Teaching Staff Available.

A. Based upon the program needs portrayed in Item V, and with the assistance of professional consultants, the survey committee should determine instructional personnel needs. Having derived these needs, the sponsors should seek an analysis of the availability of such staff members through the Missouri Commission on Higher Education and other institutions of higher education in Missouri. The findings of this analysis should be presented in a brief narrative discussion.

XI. Community Attitudes--Evidence of Community Support, Hostility, or Indifference.

A. A list of the survey committee membership including the individual members name, position or occupation, and community of residence.

B. An analysis of the petition activity including the number of votes cast in the last annual election, source of information on last vote, number of signatures required and number of signatures obtained for each constituent public school district.

C. A presentation of the responses to the questions concerning the need for establishment of a junior college district as elicited by the follow-up, parental interest, and business and industry surveys discussed in Items III, IV, and V.

D. A list of contributors to the support of the survey of need, as well as the total amount raised through such contributions. Pledges of future contributions contingent upon establishment of the junior college district should be cited in narrative and also documented in writing in the appendix to the application.

E. A list of civic, educational, and service groups which have adopted motions supporting the establishment of the proposed junior college district, indicating the date of the meeting in which the motion was passed. Letters documenting support of this type should be appended to the application.

F. Statements of the news media relative to the junior college establishment should be discussed in narrative in the text of the application. The complete actual statements should be included in the appendix of the application in chronological order (dates indicated).

G. The strength of opposition to the proposed junior college should be discussed in narrative. Letters from groups or individuals opposing the establishment should be collected and included in the appendix.

XII. Extent of Local Resources for Financing the Community Junior College.

The total assessed valuation of the proposed junior college district for the previous five years and projected five years into the future should be presented as basic information for this analysis.

The estimation of revenue necessary for operation should be computed as follows:

A. Considering the projected enrollments of the Texas Research League Formula of Item IV, the program proposed in Item V, and the current per capita expenditure in the state (the state average, or for those institutions proposing more than 15 per cent enrollment in career or special-unclassified programs, a higher expenditure) the total operational expenditure should be computed using the following.

Formula: Estimated enrollment multiplied by the appropriate per capita expenditure equals the estimated total expenditure.

B. To determine the amount of revenue to be provided by each of four sources under current conditions, the appropriate percentages determined within the Revenue Source Index should be applied to the total operational expenditure.

Formula: Total expenditure multiplied by the appropriate four percentages of the Revenue Source Index provides the estimated amount of money that must be derived from each of the four sources: state and local taxes; student fees; state appropriations; and all other income.

1. The tax levy on local property and utilities is computed by dividing the amount of money to be derived from state and local taxes by the total assessed valuation of the proposed district. The resultant levy should fall within the legislated tax levy limitation of the Enabling Act.

Formula: Money to be derived from state and local taxes divided by the total assessed valuation of the district equals the required tax levy.

2. The average fee or tuition charges may be computed through consideration of the amount of money to be derived from student fees and the projected FTE enrollment. The resultant figure may be compared to assessments to students throughout the state.

Formula: Money to be derived from student fees divided by projected FTE enrollment equals the average student assessment.

3. The average state aid appropriation per student required by the proposed junior college may be computed utilizing the amount to be derived from "state aid and appropriations" and the projected FTE enrollment. The resultant answer may then be compared to the current actual state aid allocation per student for the state.

Formula: Money to be derived from state aid and appropriations divided by the projected FTE enrollments equals the amount of state aid per student required by the institution.

The determination of revenue necessary for capital outlay should be computed upon a formula devised by the state's approval agency. The computation of capital outlay needs should incorporate any facilities and/or sites discussed in Item VIII or contributions or grants presented in Item XI, as well as an estimation of needs for new construction or renovations of existing structures.

Observations

Based upon the data analyzed in this study combined with the observations, impressions, and conjecture of the author, the following discussion presents some related implications and applications of this study.

The trends in criteria for establishment indicate increases in terms of size of enrollment, definition of the role of community-junior colleges, and the financial support necessary to operation of such institution. If one were to adopt the enrollments standards suggested in recent legislation of several states or advocated in research by Dr. Richard L. Norris, Dr. William Eberle, or Dr. James Spencer (discussed previously), it would appear that an enrollment of 1,000 FTE students is necessary to provide a comprehensive community-junior college program.

Assuming this 1,000 FTE enrollment standard to be valid, the findings of this study might then be applied to the development of criteria for future Missouri junior college establishment. For example, in order to obtain an enrollment of 1,000 FTE students under conditions existent in the "selected" junior college districts at the present, the following factors should be present:

1. A total population of 83,300 (multiplied by .012), or
2. A high school enrollment grades nine-twelve of 5,000 (multiplied by .20), or

3. A population eighteen-nineteen years of 2,940 (multiplied by .34), or
4. A total number of graduates per year of 1,075 (using the Texas Research League Formula).

The approving agency should give greater credence to qualification under 3 and 4 than 1 or 2 based upon the correlations found in this study. (However, replication and recomputation annually by the approving agency may indicate a change in the relationships and ratios found in this study.)

The same technique can be utilized in determining criteria standards for financial support capabilities. Utilizing the 1,000 FTE enrollment projection as a base, and assuming an estimated career or special-unclassified enrollment of not more than 15 per cent, the determination of operating expenditures would be computed as follows:

1. 1,000 FTE students multiplied by $740 (the approximate average per capita expenditure for 1966-67. This figure should be up-dated annually and trend line projections developed) equals an estimated total expenditure of $740,000.
2. Based upon the experience of the "selected" junior college districts this money would be derived from the following four sources:

a. State and local taxes--$290,860.

b. Student fees--$102,860.

c. State aid and appropriations--$216,820.

d. All other income--$132,460.

3. Assuming an authorized levy of $.40 per one hundred dollars assessed valuation, a proposed district must have a total assessed valuation of $72,715,000.

4. Income from student fees must average approximately $103 per FTE enrollee.

5. State aid and appropriations must average $217 per FTE student.

If a greater percentage of students (than 15 per cent) were estimated for the career or special-unclassified programs, the high per capita expenditures of institutions enrolling greater percentages in these programs should be used. Assuming the 1,000 FTE enrollment, the necessary revenue would be required as follows:

1. 1,000 FTE students multiplied by $890 (the approximate per capita expenditure at the institution operating the most expensive program) equals a total expenditure of $890,000.

2. The amount to be derived from the four primary sources of revenue are:

a. State and local taxes--$346,210.

b. Student fees--$123,710.

c. State aid and appropriations--$260,770.

d. All other income--$159,310.

3. Assuming an authorized tax levy of $.40 per one hundred dollars assessed valuation, the total assessed valuation required to obtain the necessary revenue through state and local taxes is $86,552,250.

4. Income from student fees must average approximately $124 per FTE enrollee.

5. Income from state aid and appropriations for operations must average approximately $261 per FTE enrollee.

Implications for Further Research

1. The most obvious need for research implied by this study is the annual up-dating and projecting of the data discussed, in order that the application of the techniques described may be sensitive to the conditions of the times.

2. This study presents a gross depiction of the relationships between factors utilized in projecting enrollment. There exist, however, many unique characteristics of populations, which influence the broad findings of this study. It is recommended that detailed studies be conducted regarding:

a. The patterns of attendance at other institutions of higher education prior to the establishment of a community-junior college as compared to the patterns subsequent to the establishment and operation of the new institution.

b. The effect of social, economic and educational characteristics of the populations served by a community-junior college upon attendance at that institution.

c. The relationship of the total tax burden of the junior college district to the public support and encouragement of expansion and program development of the institution.

3. This study relates conditions of "selected" junior colleges in Missouri. The replication of this study in other states should provide a basis for developing generalization to a larger extent than is presently appropriate.

4. This study has emphasized factors contributing to efficient and effective institutional operation. Other studies should be conducted emphasizing effective and continuing program development based upon existing and anticipated community and individual needs.

BIBLIOGRAPHY

BIBLIOGRAPHY

Public Documents

Missouri State Department of Education. Missouri School Laws. Jefferson City: Missouri State Department of Education, 1966.

Missouri State Department of Education. Missouri Uniform Accounting Procedures for Public Junior Colleges. Jefferson City: Missouri State Department of Education, 1968.

Missouri State Department of Education. Principles, Regulations and Standards for the Organization and Accreditation of Public Junior Colleges in Missouri. Jefferson City: Missouri State Department of Education, 1962.

Books

Blocker, Clyde E., Plummer, Robert H., and Richardson, Richard C. The Two-Year College: A Social Synthesis. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1965.

Bogue, Jesse P. The Community College. New York: McGraw-Hill Book Co., Inc., 1950.

Bogue, Jesse P., and Burns, Norman. "Legal and Extra-legal Influences for Improving College," The Public Junior College, Chapter XII, Fifty-fifth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1956.

Borg, Walter R. Educational Research: An Introduction. New York: David McKay Company, Inc., 1963.

Downie, N. M., and Heath, R. W. Basic Statistical Methods. New York: Harper & Row, Publishers, Second Edition, 1965.

Eells, Walter Crosby. The Junior College. Cambridge, Mass.: Houghton-Mifflin Co., 1931.

Fretwell, Elbert K. "Establishing a Junior College," The Public Junior College, Chapter XIV, Fifty-fifth Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1956.

Hillway, Tyrus. The American Two-Year College. New York: Harper and Brothers, 1958.

Koos, Leonard V. Integrating High School and College. New York: Harper and Brothers, 1946.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.

Thornton, James W. The Community Junior College. New York: John Wiley and Sons, Inc., 1966.

Periodicals

Dvorek, August and Merrick, N. L. "How Large Should a Junior College Be?" Junior College Journal, III, No. 4 (January, 1933), 194-98.

Garrison, Lloyd A. "How Small Can a Junior College Be?" Junior College Journal, IX, No. 3 (December, 1938), 118-21.

Holy, T. C. "Criteria for the Establishment of Public Junior Colleges," The High School Teachers, V, No. 4 (April, 1929), 118-20, 133-34.

Koos, Leonard V. "Essentials in State-wide Community College Planning," The School Review, LVII, No. 7 (September, 1949), 341.

Price, Hugh G. "Planning for Public Junior College Development Through State and National Surveys," Junior College Journal, XX, No. 1 (September, 1949), 16-22.

Bulletins and Reports

American Association of Junior Colleges. Establishing Legal Bases for Community Colleges. Proceedings of a Conference Sponsored by the Commission on Legislation, Washington, D. C.: American Association of Junior Colleges, 1962.

American Association of Junior Colleges. Junior College Directory, 1968. Washington, D. C.: American Association of Junior Colleges, 1968.

American Association of Junior Colleges. Principles of Legislative Action for Community Junior Colleges. A Handbook Prepared by the Commission on Legislation. Washington, D. C.: American Association of Junior Colleges, 1962.

Colvert, C. C. A State Program for Public Junior Colleges in Colorado. Austin, Texas: The University of Texas, 1963.

Florida Community College Council. The Community Junior College in Florida's Future. Tallahassee: Florida State Department of Education, 1957.

Illinois Board of Higher Education. A Master Plan for Higher Education in Illinois. Springfield: The Illinois Board of Higher Education, 1964.

Iowa State Department of Education. Education Beyond High School Age: The Community College. Des Moines: State of Iowa, 1962.

Martorana, S. V. The Community College in Michigan. A report prepared for the Michigan Legislative Study Committee on Higher Education. Lansing: Michigan Legislative Study Committee on Higher Education, 1957.

Morrison, D. G., and Martorana, S. V. Criteria for the Establishment of 2-year Colleges. Washington, D. C.: U. S. Government Printing Office, 1960.

Morrison, D. G., and Witherspoon, Clinette F. Procedures for the Establishment of Public 2-year Colleges. Washington, D. C.: U. S. Government Printing Office, 1966.

McClure, William P., Mann, George C., Hamlin, Herbert C., Karnes, Ray M., and Van Miller, P. Vocational and Technical Education in Illinois: Tomorrow's Challenge. Springfield: Office of the Superintendent of Public Instruction, 1960.

State University of New York. The Realization of a Community College: State-level Partnership. Albany: State University of New York, 1967.

Texas Research League. The State Board and the Junior Colleges. Austin: The Texas Research League, 1964.

Missouri State Reports

Academy for Educational Development, Inc. Looking Ahead to Better Education in Missouri. A report on organization, structure of schools and junior colleges. New York: Academy for Educational Development, Inc., 1966.

Brunner, Ken August. Organized Occupational Education in Missouri Institutions of Higher Education. A study prepared for the Missouri Commission on Higher Education. Jefferson City: Missouri Commission on Higher Education, 1965.

Campbell, Rex R. Population and Higher Education in Missouri. Jefferson City: Missouri Commission on Higher Education, 1967.

Missouri Commission on Higher Education. The First Coordinated Plan for Missouri Higher Education. Jefferson City: Missouri Commission on Higher Education, 1966.

Missouri Commission on Higher Education. Summary Report on Federal Funds Allocations. Jefferson City: Missouri Commission on Higher Education, 1967.

Missouri State Division of Commerce and Industrial Development. Missouri Corporate Planning Guide. Jefferson City: Missouri State Division of Commerce and Industrial Development, 1967.

Strayer, George D., and Englehardt, N. L. Publicly Supported Higher Education in the State of Missouri. A report to the State Survey Commission Preliminary Report. New York: Teachers College, Columbia University, 1929.

Swanson, J. Chester. A Gateway to Higher Economic Levels: Vocational-technical Education to Serve Missouri. Berkeley: University of California, 1966.

Feasibility Studies

Committee for the Junior College of Jefferson County, Missouri. Survey for the Establishment of the Junior College of Jefferson County. Hillsboro, Missouri: The Committee for the Junior College of Jefferson County, Missouri, 1962.

Committee for the Junior College District of Metropolitan Kansas City. Survey for Establishing the Junior College District of Metropolitan Kansas City. Kansas City, Mo.: The Committee for the Junior College District of Metropolitan Kansas City, 1964.

Committee on Higher Educational Needs of Metropolitan St. Louis. Higher Education and the Future of Youth in the Greater St. Louis Educational Area. A report to the Governor's Committee on Education Beyond the High School in Missouri and to the Citizens of the Greater St. Louis Educational Area. St. Louis: Committee on Higher Educational Needs of Metropolitan St. Louis, 1960.

Committee for Missouri Western Junior College District. Survey for Establishing Missouri Western Junior College District. St. Joseph, Mo.: Committee for Missouri Western Junior College, 1964.

Hall, George L. Higher Education in Three Selected Areas of Missouri. A report to the Missouri Commission on Higher Education. Jefferson City: Missouri Commission on Higher Education, 1964.

Midwest Research Institute. The Economic Development Potential of Sedalia, Missouri. Kansas City, Mo.: Midwest Research Institute, 1964.

Smith, Max S. Final Report: Lake County Community College Feasibility Study. East Lansing: Office of Community College Cooperation, Michigan State University, 1966.

Smith, Max S., Anttonen, Elmer, and Thaden, J. F. Dickinson-Iron Area: The Feasibility of a Community College. East Lansing: Michigan State University, 1966.

Steering Committee for the Proposed Delta College of Missouri. Survey for Establishing the Delta College of Missouri (Bootheel Junior College). Kennett, Mo.: Steering Committee for the Proposed Delta College of Missouri, 1966.

Survey Committee for Establishing a Junior College District of Jasper County, Missouri. Survey for Establishing the Junior College District of Jasper County, Missouri. Joplin, Mo.: Survey Committee for Establishing a Junior College District of Jasper County, Missouri, 1964.

Survey Committee for Establishment of Mineral Area Junior College. Junior College Summary Report. Flat River, Mo.: Survey Committee for Establishment of Mineral Area Junior College, 1964.

Survey Committee of the Proposed Junior College District of East Central Missouri. Survey for Establishing the Junior College District of East Central Missouri. Union, Mo.: Survey Committee of the Proposed Junior College District of East Central Missouri, 1967.

Survey Committee of the Proposed Junior College District of Newton and MacDonald Counties, Missouri. Survey for Proposed Junior College District of Newton and MacDonald Counties, Missouri. Neosho, Mo.: The Survey Committee of the Proposed Junior College District of Newton and MacDonald Counties, Mo., 1962.

Survey Committee of the Proposed Junior College District of Sedalia, Missouri. Survey for Establishing the Junior College District of Sedalia, Missouri. Sedalia, Mo.: Survey Committee of the Proposed Junior College District of Sedalia, Mo., 1965.

Survey Committee of the Proposed Three Rivers Junior College District of Poplar Bluff, Missouri. Survey for Establishing the Three Rivers Junior College District of Poplar Bluff, Missouri. Poplar Bluff, Mo.: Survey Committee of the Proposed Three Rivers Junior College District of Poplar Bluff, Mo., 1965.

Young, Raymond J. Citizens Survey of Kansas City Metropolitan Area Junior College District Possibility. Kansas City, Mo.: The Committee for the Junior College of Metropolitan Kansas City, 1962.

Young, Raymond J., Dyke, Garold, and Dear, R. Ernest. Shiawassee-Clinton Area Vocational-Technical Education Study. Ann Arbor: University of Michigan, 1966.

Unpublished Material

Allen, John Stuart. "Criteria for the Establishment of Public Junior Colleges." Unpublished doctoral dissertation, New York University, 1936.

Boze, Floyd D. "Criteria for the Establishment of Public Junior Colleges in Texas." Unpublished doctoral dissertation, University of Tennessee, 1955.

Eberle, August William. "Size of Satisfactory Community Colleges." Unpublished doctoral dissertation, University of Wisconsin, 1952.

Englehart, George D. "Proposed School Service Areas at St. Francois County, Missouri." Unpublished doctoral dissertation, University of Missouri, Columbia, 1945.

Fink, Russell Foster. "Some Criteria for the Establishment of Community Colleges, with Specific Reference to Michigan." Unpublished doctoral dissertation, Michigan State University, 1952.

Heglar, Harlan L. "A Survey of Business and Industry for Vocational-Technical Programs in the Jasper County Junior College." Unpublished doctoral dissertation, Michigan State University, 1966.

Hilton, Wallace A. "Some Functions of Education at the Junior College Level." Unpublished doctoral dissertation, University of Missouri, Columbia, 1945.

McClain, Charles. "Criteria for the Establishment of Public Junior Colleges in the State of Missouri." Unpublished doctoral dissertation, University of Missouri, Columbia, 1961.

Mittler, Eli F. "Proposed Reorganization for Education for Five Counties of Missouri." Unpublished doctoral dissertation, University of Missouri, Columbia, 1956.

Missouri State Department of Education, Junior College Section. "Missouri Public Junior Colleges, Memorandum No. 2." Jefferson City: Missouri State Department of Education, 1967. (Mimeographed.)

Norris, Richard L. "A Study of Selected Institutional Factors and Their Relationship to Breadth of the College Transfer Curriculum in Missouri Public Junior Colleges." Unpublished doctoral dissertation, Michigan State University, 1968.

Norris, Thomas J. "A Procedure for Determining Junior College Curriculum." Unpublished doctoral dissertation, University of Kentucky, 1962.

Ozarkin Study Commission. Preliminary draft of a report on Vocational-Technical Education. Little Rock, 1968. (Mimeographed.)

APPENDICES

APPENDIX A

EXAMPLES OF DOCUMENTATION FOR ITEM 1: SOCIO-ECONOMIC AND POPULATION DESCRIPTIONS OF THE PROPOSED DISTRICT

University Extension Center
Hillsboro, Missouri

Historical Population Information
Jefferson County, Missouri

I. Population prior to 1900.

Census Year	Population
1850	6,928
1860	10,344
1870	15,380
1880	18,736
1890	22,484

II. Population and % of change 1900 to 1960.

Census Year	Population	Change From Prior Census
1900	25,712	14.4%
1910	27,878	8.4%
1920	26,555	- 4.7%
1930	27,563	3.8%
1940	32,023	16.2%
1950	38,007	18.7%
1960	66,377	74.6%

III. Population by minor civil divisions 1910 to 1960.

Townships	1910	1920	1930	1940	1950	1960
Big River	1,707	1,426	1,120	1,339	1,272	1,837
Central	1,849	1,465	1,329	1,377	1,833	3,261
Joachim	8,774	9,772	10,982	12,839	14,239	18,080
Meramec	2,605	2,286	1,941	2,681	4,042	8,690
Plattin	1,613	1,471	1,353	1,653	1,844	3,260
Rock	3,876	3,055	3,931	4,801	6,673	21,801
Valle	7,454	7,080	6,097	7,333	8,104	9,448
	27,878	26,555	27,563	32,023	38,007	66,377

Municipalities	1910	1920	1930	1940	1950	1960
Festus	2,556	3,348	4,085	4,620	5,199	7,021*
De Soto	4,721	5,003	5,069	5,121	5,357	5,804
Crystal City	--	2,243	3,057	3,417	3,499	3,678*
Hillsboro	261	205	233	256	390	457
Pevely	--	167	274	311	416	416
Kimmswick	235	141	172	172	207	303
Parkdale	--	--	--	--	--	198
	7,773	11,107	12,890	13,897	15,068	17,877

*Note: Annexations included.

Source: Application for Establishment of Jefferson College.

UNION ELECTRIC COMPANY
Jefferson District

June 25, 1963

Number of Electric Customers--End of Year.

	Residential	Other	Total
Actual			
1956	18,462	1,804	20,266
1957	19,199	1,867	21,066
1958	19,843	1,918	21,761
1959	21,134	2,022	23,156
1960	22,268	2,137	24,405
1961	23,205	2,218	25,423
1962	24,203	2,336	26,539
1963*	24,563	2,394	26,957
Forecast			
1963	25,803	2,476	28,279
1964	27,609	2,626	30,235
1965	29,542	2,776	32,318
1966	31,610	2,926	34,536
1967	33,823	3,176	36,800
1968	36,191	3,226	39,417

Increase Over Preceding Year.

	Residential	Other	Total
Actual			
1956	962	29	991
1957	737	63	800
1958	644	51	695
1959	1,291	104	1,395
1960	1,134	115	1,249
1961	937	81	1,018
1962	998	118	1,116
1963*	360	58	418
Forecast			
1963	1,600	140	1,740
1964	1,806	150	1,956
1965	1,933	150	2,083
1966	2,068	150	2,218
1967	2,213	150	2,363
1968	2,368	150	2,518

*End of May.

Source: Application for Establishment of Jefferson College.

Projected enumerations and populations of Jefferson County, Missouri.

Year	Predicted Enumeration	Population Factor	Projected Population
1980	74,935	3.31	248,035
1975	56,112	3.38	89,659
1970	39,085	3.44	134,452
1969	36,358	3.45	125,435
1968	33,821	3.47	117.359
1967	31,461	3.48	109,484
1966	29,266	3.49	102,138
1965	27,136*	3.40	92,262
1964	25,325	3.52	89,144
1963	23,558*	3.53	83,160
1962	21,387*	3.54	75,710
1961	19,961*	3.56	71,061
1960	18,717*	3.57	66,377*

*Asterisks identify known, reliable data.
Source: Application for Establishment of Jefferson College.

The 1962 census shown below is arrived at by using the ratio of the 1960 school enumeration to the 1960 census.

The 1960 census of Jefferson County was 66,700. It is estimated by conservative sources that the 1970 census of Jefferson County will exceed 110,000. This estimate is made only on the present rate of growth for the county. Various economic study companies have made estimates a great deal in excess of our 110,000 estimate.

Population by present school districts in the proposed junior college district.

School District	1960 Census	1962 Census
Crystal City	3,756	4,111
De Soto	7,568	7,568
Windsor	3,720	4,068
Pevely	1,484	1,477
Fox	10,927	14,175
Pacific	362	376
Eureka	188	195
Northwest	11,839	13,547
Grandview	1,263	1,285
Hillsboro	4,505	5,243
Antonia	2,754	3,386
Herculaneum	2,893	3,316
Festus	9,588	10,941
Jefferson	2,055	2,148
Athena	2,634	3,120
Sunrise	876	930

Source: Application for Establishment of Jefferson College.

APPENDIX B

EXAMPLES OF NARRATIVE DOCUMENTATION FOR ITEM 2: MAPS SHOWING TOPOGRAPHY, ROAD SYSTEMS, POPULATION CENTERS AND MAIN COMMUTING ROUTES TO A PROPOSED CAMPUS

The following legal description of the area to be included in the proposed Junior College District has been taken from maps in the respective County Offices of Assessor and Superintendent of Schools, and from those legal descriptions available. The maps are not completely consistent and the true boundary lines of all the component districts have not been verified.

LEGAL DESCRIPTION:

(a) All of Buchanan County, Missouri, except a tract described as starting at the point where the Southern boundary of Buchanan County intersects the Western boundary of Missouri; thence East along the Southern boundary of Buchanan County to the Southeast Corner of the West Half of Section 36, Township 55, Range 35; thence North to the Northwest Corner of the Southeast Quarter of Section 25, Township 55, Range 35; thence East to Highway 116; thence North along Highway 116 to the Southeast Corner of the Southeast Quarter of Section 24, Township 55, Range 35; thence West to the Southwest Corner of a 27-acre farm (Fairis); thence North to the Northwest Corner of said 27-acre farm; thence East to Highway 116; thence North to the Southwest Corner of Section 18, Township 55, Range 34; thence East to the Southeast Corner of the Southwest Quarter of said section; thence North to the Northeast Corner of the Northwest Quarter thereof; thence East to the Southeast Corner of Section 8, Township 55, Range 34; thence South to the North Half of the Northwest Quarter of Section 16, Township 55, Range 34; thence East along the North Half of the Northwest Quarter of Section 16, to the Northwest Quarter section line; thence South to the Southeast Corner of the Northwest Quarter of Section 16, Township 55, Range 34; thence East to the Platte River; thence Southerly along the Platte River to the Platte County line; said Buchanan County tract comprising part of School District R-IV, Gower, and all of districts Spring Garden No. 19; Moore No. 24; R-1, Platte Valley; R-II, Easton; R-III, Lake Contrary; R-IV, DeKalb and Rushville; R-V, Agency and Faucett; and the St. Joseph District; and

(b) A tract in Platte County, Missouri, adjacent to and extending South from the Southeast Corner of Buchanan County, encompassed within the following: Beginning at the Northeast Corner of Platte County, Missouri; thence South of the Southeast Corner of Section 9, Township 55, Range 33; thence Northwesterly to the center of the West line of said Section 9; thence North to the Northwest Corner thereof; thence West to the Southwest Corner of Section 6; thence North along the West line of Section 6, to the Platte River; thence Northwesterly along the river to the North County Line; thence East to the place of beginning; comprising part of District R-IV, Gower; and . . . .

Source: Application for Establishment of Missouri Western College.

Legal description of the proposed Three Rivers Junior College District (name and number of each school district to be included in the proposed junior college district).

Butler County	Carter County	Ripley County	Wayne County
Poplar Bluff R-1	Van Buren R-1	Doniphan R-1	Clearwater R-1
Broseley R-2	Ellsinore R-2	Naylor R-2	Greenville R-2
Fisk-Rombauer R-3		Ripley Co. R-3	Mt. View #7
Neelyville R-4		Ripley Co. R-4	Clubb #11
Qulin R-5		Spell #25	Lower Turkey Creek #14
Victory #9			Hiram #15
Hendrickson #4			White Hollow #16
Oak Ridge #34			Union Hill #73
Cane Creek #21			
Davidson #11			

Source: Application for Establishment of Three Rivers Junior College.

APPENDIX C

EXAMPLES OF DOCUMENTATION FOR ITEM 4: PROSPECTIVE COMMUNITY JUNIOR COLLEGE STUDENT

School enrollment of Jefferson County.

School District		Special Education	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Northwest	R-1	18	--	302	341	292	283	276	265	261	243	233	233	182	118	3047
Grandview	R-2	--	--	29	33	21	26	25	25	28	25	--	--	--	--	212
Hillsboro	R-3	--	--	130	112	123	116	107	104	109	103	133	117	81	51	1286
Antonia	R-4	4	--	96	88	89	62	76	72	75	67	--	--	--	--	629
Herculaneum	R-5	10	107	62	67	66	70	55	69	69	56	137	124	115	89	1096
Festus	R-6	16	223	141	174	133	148	137	114	131	138	201	159	117	80	1912
Jefferson	R-7	6	--	39	40	42	45	37	30	31	35	--	--	--	--	305
Athena	R-8	18	36	65	64	59	72	43	61	52	47	--	--	--	--	517
Sunrise	R-9	9	--	24	22	14	13	17	17	16	13	--	--	--	--	145
Windsor	C-1	10	--	96	78	72	75	65	70	65	75	--	--	--	--	606
Pevely	C-4	20	25	48	29	38	34	27	28	22	28	--	--	--	--	299
Fox	C-6	36	--	351	307	280	308	278	219	279	229	261	229	162	106	3045
Crystal City	#47	--	81	58	53	60	56	56	57	64	54	150	162	108	75	1035
De Soto	#73	55	100	140	135	125	118	107	130	112	131	188	188	151	94	1774
Lutheran		--	14	40	38	25	26	24	25	23	20	--	--	--	--	235
Catholic		--	46	475	371	374	344	338	270	281	275	129	103	119	82	3207
Total		202	632	2096	1952	1813	1796	1668	1556	1618	1539	1432	1315	1035	695	19,349

Source: Application for Establishment of Jefferson College.

Trends in school enumeration: ages 6 through 19.

School	District	1950	1952	1954	1956	1958	1960	1962
Northwest	R-1	950	1086	1715	2353	2873	3335	3816
Grandview	R-2	190	191	206	257	278	356	362
Hillsboro	R-3	543	619	804	966	1024	1269	1477
Antonia	R-4	209	320	462	577	631	776	954
Herculansum	R-5	484	468	537	627	767	815	934
Festus	R-6	1863	2030	2373	2372	2510	2701	3082
Jefferson	R-7	264	283	318	408	523	579	605
Athena	R-8	367	409	683	741	763	742	879
Sunrise	R-9	307	252	266	258	236	247	261
Windsor	C-1	500	594	653	820	944	1048	1151
Pevely	C-4	286	309	327	348	363	418	416
Fox	C-6	771	981	1261	2057	2382	3078	3993
Crystal City	#47	984	975	1045	1067	1182	1058	1159
De Soto	#73	1560	1924	2291	2045	2132	2132	2132

Source: Application for Establishment of Jefferson College.

Number of graduates who enter college from Jefferson County Schools (1959-1960--1960-1961).

	Boys	Girls	Total
Northwest R-1			
1959-60 Graduates	53	49	102
Entered College	9	1	10
1960-61 Graduates	54	44	98
Entered College	13	13	26
Hillsboro R-3			
1959-60 Graduates	29	37	66
Entered College	5	5	10
1960-61 Graduates	26	32	58
Entered College	4	6	10
Herculaneum R-5			
1959-60 Graduates	42	43	85
Entered College	5	5	10
1960-61 Graduates	52	41	93
Entered College	6	5	11
Festus R-6			
1959-60 Graduates	65	72	137
Entered College	15	18	33
1960-61 Graduates	60	77	137
Entered College	15	17	32
Fox C-6			
1959-60 Graduates	42	47	89
Entered College	5	7	12
1960-61 Graduates	50	53	103
Entered College	16	7	23
Crystal City #47			
1959-60 Graduates	48	46	94
Entered College	25	23	48
1960-61 Graduates	42	54	96
Entered College	23	16	39
De Soto #73			
1959-60 Graduates	70	47	117
Entered College	18	6	24
1960-61 Graduates	61	44	105
Entered College	10	10	20

Source: Application for Establishment of Jefferson College.

A COLLEGE ATTENDANCE QUESTIONNAIRE

1. Do you plan to attend college upon graduation from high school? 1931 Yes 1390 No.
2. How do your parents feel about your future education after high school?

   Are they anxious for you to attend college?

   2407 Yes 839 No.

   Are they opposed to your going to college?

   242 Yes 2848 No.
3. Would you attend a junior college if there was one in Jefferson County that would be tuition free and fully accredited? 2355 Yes 880 No.
4. Place a check mark in front of the item appearing in the list below which best describes your financial support if you continue your education after high school:

   731 My family will provide complete financial support

   445 I will be totally self-supporting.

   2033 My family will provide partial support, but I must earn the rest through part-time employment.
5. What school do you plan to attend? _____
6. What course do you plan to take? _____
7. Have you discussed future plans with your parents?

   2053 Yes 799 No.
8. Have you discussed future plans with school advisor or instructor? 750 Yes 2231 No.

_____

Signature

APPENDIX D

EXAMPLES OF DOCUMENTATION FOR ITEM 11: COMMUNITY ATTITUDES--EVIDENCE OF COMMUNITY SUPPORT, HOSTILITY OR INDIFFERENCE

REPORT ON PETITIONS

School District	Vote In Last Election	Source of Information On Last Vote	Signers Have To Needed	Date	
R-IV, Gower	514	Mrs. W. Leslie Myers Clinton Co. Supt. of Schools	16	51	15%
R-III, Savannah	604	Mrs. Lola Fleming Andrew Co. Supt. of Schools	31	50	8%
R-IX, Avenue City	31	Mrs. Lola Fleming Andrew Co. Supt. of Schools	2	11	35%
Spring Graden No. 19	235	James Seever, Clerk Spring Garden District	12	23	10%
Moore No. 24	13	Everett Downing, Clerk Moore District	1	15	115%
R-I, Platte Valley	80	Mrs. Bessie Ellison Supt. of Schools	4	17	21%
R-II, Easton	158	Charles Beggs Supt. of Schools	8	33	21%
R-III, Lake Contrary	153	C. D. Kelley Supt. of Schools	8	22	14%
R-IV, DeKalb & Rushville	514	Gerald Walker Supt. of Schools	26	62	12%
R-V, Agency & Faucett	432	E. B. Lott Supt. of Schools	22	51	11%
St. Joseph District	7,421	Hubert Campbell, Business Manager, St. Joseph District	372	1764	24%
Totals	9,946		502	2092	21%*

*Per cent of last vote.
Source: Application for Establishment of Missouri Western College.

Members of Committee

Carl D. Clark
Manager Skelgas Co.
Hillsboro, Missouri

Wallace Loffoon
Cashier,
Bank of Hillsboro
Hillsboro, Missouri

John Keselik
Manager of the Dow Chemical Co.
Pevely, Missouri

T. Hagen
Vice-President
Crystal City State Bank
Crystal City, Missouri

True Taylor
Administrator of Jefferson
Memorial Hospital
Festus, Missouri

Grant F. Davis
Manager Armour Agricultural-
Chemical Company,
Rural Route
Festus, Missouri

Rt. Rev. Msgr. Aloys J. Marschner, V. F.
Dean of Festus Deanery,
Supt. Sacred Heart School
Festus-Crystal City

Edw. J. Eversole
Circuit Judge
Jefferson County

Will B. Dearing
Attorney
Hillsboro

Cora Brase Dreyer
Head of Social Studies Dept.
Festus High School (President of Delta Kappa Gamma
[Teachers Honor Fraternity], Former President of Jefferson
County Teachers' Association, and P.T.A. Council)

Members of Committee

Carl E. Rice, M. D.
County Health Director
Crystal City, Missouri

Walter Finnical
Merchant and President of
Joachim Savings and Loan Assoc.

E. C. Jett
Superintendent of Missouri Pacific
Railroad Car Shops
De Soto, Missouri

George Duffner
Manager Duffner Ice Cream Company
De Soto, Missouri

Harry Williams
Manager De Soto Shoe Company
De Soto, Missouri

Bert J. Reber
Editor, The Jefferson County
Press-Times
Crystal City, Missouri

Karl McKinstry, M.D.
President of the American Bank
of De Soto, Missouri

Source: Application for Establishment of Jefferson College.

APPENDIX E

EXAMPLES OF DOCUMENTATION FOR ITEM 12: EXTENT OF LOCAL RESOURCES FOR FINANCING THE COMMUNITY JUNIOR COLLEGE

Assessed valuation for each school district and Jefferson County.

	Assessed Valuation	Levy
Northwest R-1	$16,571,555.64	3.68
Grandview R-2	2,229,000.00	2.80
Hillsboro R-3	5,248,883.00	3.90
Antonia R-4	2,500,000.00	3.45
Herculaneum R-5	3,658,930.00	3.45
Festus R-6	7,493,510.00	3.95
Jefferson R-7	5,174,000.00	2.35
Athena R-8	1,995,020.00	3.50
Sunrise R-9	666,000.00	2.75
Windsor C-1	3,226,453.00	3.55
Pevely C-4	1,939,440.00	3.45
Fox C-6	12,451,443.00	3.95
Crystal City #47	6,890,460.00	3.60
De Soto #73	6,479,294.00	3.95

County	.50
Road & Bridge	.35
Health Dept.	.09
Water Dist. #1	.35
Eureka R-6 Jr. College Dist. of St. Louis	.10

County Valuation for 1951	44,144,270
Valuation for 1961	103,106,986
Valuation for 1962	110,487,987

The growth in valuation from 1951 to 1961 is $58,962,716.
The growth in valuation from 1961 to 1962 is $ 7,381,001.
Present valuation for the County is $110,487,987.

Source: Application for Establishment of Jefferson College.

School Districts By County	Enumeration Oct. 1965	1965 Assessed Valuation Not Including Utilities	Assessed Valuation of Utilities 1965	Bonded Indebtedness	Tax Levy
BUTLER			10,359,991		
R-I Poplar Bluff	6688	21,742,095		2,332,315	3.95
R-II Broseley	1115	1,456,373		109,000	2.85
R-III Fisk-Rombauer	1195	2,063,620		257,000	2.95
R-IV Neelyville	1195	2,708,701		333,000	2.80
R-V Qulin	860	1,690,613		214,000	2.90
#9 Victory	49	116,315			2.95
#4 Hendrickson	95	279,796			2.95
#34 Oak Ridge	92	130,215		2,000	2.95
#21 Cane Creek	57	192,893			2.80
#11 Davidson	3	46,121			1.50
CARTER			799,300		
R-I Van Buren	645	2,143,922		118,000	2.90
R-II Ellsinore	894	1,725,420		151,500	2.70
RIPLEY			1,614,843		
R-I Doniphan	1762	4,807,998		371,590	2.35
R-II Naylor	608	1,556,000		126,300	3.10
R-III Ripley	224	613,755		18,800	2.00
R-IV Ripley	305	671,751		25,400	2.10
#25 Spell	25	67,651			2.75
WAYNE			4,809,803		
R-I Clearwater	1138	3,600,000		303,000	2.80
R-II Greenville	934	2,890,339		205,700	2.75
#7 Mt. View	1	35,890			1.00
#11 Clubb	26	82,380			1.50
#14 Lower Turkey Creek	10	56,280			1.50
#15 Hiram	26	101,843			2.00
#16 White Hollow	54	74,050			1.90
#73 Union Hill	4	25,940			2.75
TOTALS	18,005	48,849,961	17,583,937	3,537,636	

Source: Application for Establishment of Three Rivers Junior College.

FINANCIAL PROBABILITIES
THREE RIVERS JUNIOR COLLEGE
First Year of Operation

Receipts

Taxes (40c on $65,000,000 Assessed Valuation)	$260,000.00
State Aid ($240 per student for 300 students)	72,000.00
Resident Fees (275 students at $55 per semester)	15,125.00
Non-Resident Tuition and Fees (25 students at $200 per semester)	10,000.00
Grants and Federal Aid	
Total Receipts	$375,125.00

Expenditures

Academic Program (225 students @ $650)	$146,250.00
Vocational Program (75 students @ $900)	67,500.00
Rental and Operation of Building	15,700.00
Capital Outlay	40,000.00
Student Activities	5,000.00
Total Expenditures	$274,450.00
Balance on June 30, 1967	$ 82,675.00

Note: Receipts and expenditures will balance for the adult program.

Source: Application for Establishment of Three Rivers Junior College.

APPENDIX F

FTE ENROLLMENT BASES FOR THE PROGRAM COMPREHENSIVENESS INDEX

FTE enrollment by program at the selected junior colleges of Missouri.

Junior College	Transfer Program	Career Programs	Special-Unclassified	Total
Crowder	310	93	--	403
Mineral Area	535	97	2	634
Jefferson	595	167	2	764
Missouri Western	906	117	25	1,048
Missouri Southern	1,562	93	1	1,656

Source: Missouri Commission on Higher Education.

APPENDIX G

FINANCIAL BASES FOR THE REVENUE SOURCE INDEX

Statement of income from four major sources for 1966-67.

Junior College	State & Local Taxes	Student Fees	State Aid and Appro-priations	All Other Income
Crowder	$205,000	$52,780	$107,500	$50,970
Mineral Area	316,649	63,996	186,095	118,262
Jefferson	220,198	86,152	208,140	97,828
Missouri Western	238,376	149,650	286,950	39,668
Missouri Southern	652,632	272,824	428,145	840,045

Source: Missouri Department of Education.

APPENDIX H

DETAILED CAPITAL ASSETS INFORMATION

Plant value, June 30, 1967 and capital expenditures, year ending June 30, 1967, for the selected Missouri junior college.

Junior College	Plant Value					Capital Expenditures 1966-67
	Buildings	Equipment	Land & Land Improvement	Construction in Progress	Total	
Crowder	$1,839,000	$260,823	$110,000	None	$2,209,823	$43,612
Mineral Area	N. A.	N. A.	N. A.	N.A.	N.A.	305,000
Jefferson	2,439,956	425,141	490,249	$62,847	3,368,193	1,535,000
Missouri Western	71,715	80,239	133,715	None	285,669	80,772
Missouri Southern	4,000,000	500,000	500,000	550,000	5,550,000	3,500,000

Source: Missouri Department of Education.