

A Programmatic Viability Model for Planning Rural School District Organizations

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ABSTRACT

Economic, demographic, and educational trends are driving a need to restructure some rural school districts. The programmatic viability model was developed to assist local educational planners determine if a district or potential combination of districts would be capable of offering state-mandated instructional and support service programs on a continuing basis. When programmed into spreadsheet software, the model analyzed the interaction of mandated requirements, enrollment, and input parameters that included average class size, average teacher salary, employee benefits, purchased services, and supply and textbook allowances to generate numbers of sections, Full Time Equivalent (FTE) staff, and total expenditure. Revenue inputs were aggregated for comparison with estimated total expenditure. An excess of estimated revenue over expenditure indicated that a district or proposed combination of districts was programmaticaly viable. A pilot application of the model to four rural districts was used to assess utility of the model.

A PROGRAMMATIC VIABILITY MODEL FOR PLANNING RURAL SCHOOL DISTRICT ORGANIZATIONS

This project developed a programmatic viability model to assist in planning rural school district organizations. The model addressed a single but complex question: Would a district or potential combination of districts be eligible for sufficient revenue to offer the minimum instructional and supporting services mandated by state statutes and rules? Programmatic viability was defined as continuing organizational capacity to offer minimum mandated programs and services. The model was programmed into Lotus 1-2-3 Release 3™ as part of pilot applications in four adjacent rural Minnesota school districts. Application of the model in other state elementary/secondary systems would require adaptations to incorporate their unique statutory and rule provisions. The project is reported in sections which summarize premises, development, pilot applications, and results/implications.

PREMISES OF THE MODEL

Many assumptions undergird the model, but the following premises were central in its development:

1. *School districts are mechanisms through which state governments distribute access to educational opportunity and organizational planning should insure their ability to offer minimum mandated instructional and support services. Instructional and supporting services mandated by state statute and rule were construed as defining the state constitutional "uniform system of public schools" to be accessible for all resident elementary/secondary students. Instruction was of primary concern because of its institutionally unique function of school organizations. Schools perform other important functions, e.g., childcare and socialization, which are shared with other organizations, such as, family, church, and youth groups, but only schools systematically teach subjects such as reading, algebra, and chemistry. Planning should result in districts and*

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schools that are, at least, able to offer the minimum mandated instructional and supporting services.

2. *Economic, demographic, and educational changes drive the need for some school district reorganization.* In the agrarian society during the early history of the United States, elementary schooling was considered the minimum essential education and thousands of common districts were organized. Mechanization of agriculture, rural to urban migration, and high school as the minimum essential education were associated with the transition to an industrial society. High school education in rural areas was provided by larger districts that were organized in service center towns. A growing lag between educational expectations and district capability to provide services developed as low enrollment and nonoperating common districts were retained, often as shields against the taxing powers of K-12 districts. A pent-up district reorganization response to economic, demographic, and educational change followed World War II when 101,382 districts operating 24,134 secondary schools were reduced to 15,912 districts operating 24,362 secondary schools between 1945 and 1980 (National Center for Educational Statistics, 1989).

Continuing socioeconomic changes have increased educational expectations in an emerging post-industrial society that is characterized by multi-national corporations, global markets, high technology, and nontraditional lifestyles (Burke and Rumberger, 1987). A number of study and commission reports following *A Nation at Risk* (National Commission on Excellence in Education, 1983) called for a better educated workforce, particularly in mathematics, science, and technology, that could compete successfully in global markets. The same forces that led to higher educational expectations also threaten the economic viability and populations of some rural towns (Hart and Bendixsen, 1989; Stinson, 1990) and drive the need to reconsider the effectiveness and efficiency of school district organizations in these communities.

3. *Appropriate state macro policy goals for school district reorganization include increasing a) equity in access to state mandated instructional and support services, b) efficiency in use of financial resources, and c) organizational effectiveness in realization of desired learner and social outcomes.* Pursuing these goals requires an emphasis on establishing viable administrative and attendance units. The appeal of these rational policy goals sometimes obscures the difficulty of drawing new organizational plans on a slate that is

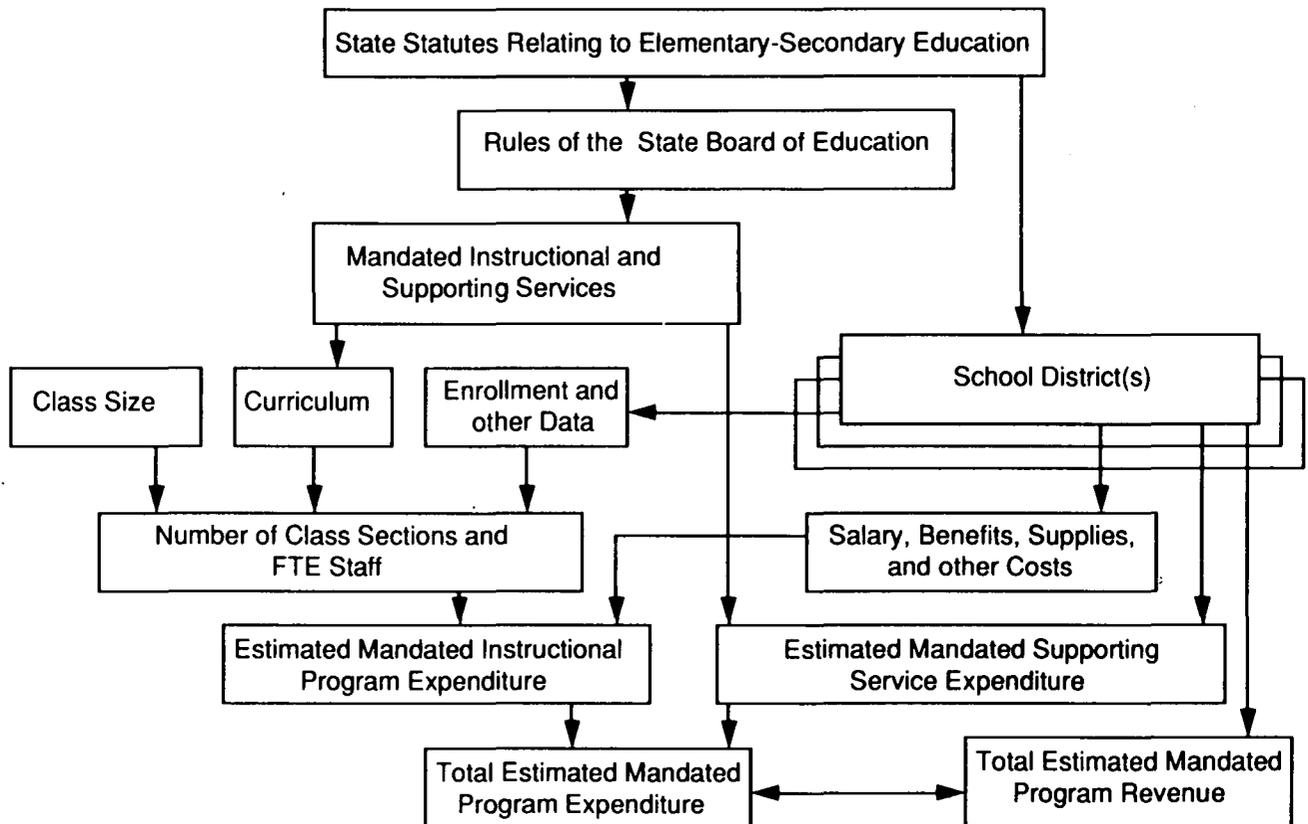
cluttered with the chalk of traditions and vested interests which may conflict with district reorganization. Alternative policy efforts to address school district organizational issues have included establishing intermediate organizations and financial incentives for voluntary reorganization. It is important that *evidence* of ability to efficiently provide a minimum mandated programs be a condition for approval of proposed reorganized districts.

DEVELOPMENT OF THE MODEL

A graphic summary of the programmatic viability model is presented in Figure 1. Instructional and supporting services mandated by state statutes and rules constituted the core of the model. Instructional services were operationalized through a curriculum of graded elementary instruction and secondary courses. For elementary grades and each secondary course, district enrollment data were interacted with desired average class size parameters to generate numbers of sections and required FTE staff. Average teacher salary, employee benefit rate, instructional supply allowance, and other cost data were used to estimate expenditures for each mandated instructional program. When applied to single districts, model cost component data reflected actual district expenditures in the base year. In applications to combinations of districts, cost components represented average object expenditures of all districts in the state falling within the enrollment size category. Estimated expenditures for mandated supporting service programs consisted of actual program expenditures in single district applications and average program expenditures within the enrollment size category in combined district applications. Matching revenues were estimated by aggregating district receipts from selected sources during the base year. An excess of total estimated revenue over total mandated program expenditures was a positive indication of programmatic viability. Development of the model is summarized in the following steps:

1. The scope of the model was limited and defined. Its application was limited to public elementary/secondary school districts, i.e., programs provided by cooperatives or regional education organizations were treated as purchased services and not as part of district capability. Only district capability to provide mandated instructional and support services was addressed directly by the model. Of many valued outcomes of

Figure 1
Programmatic Viability Model



schooling, the model's primary concern was with outcomes that were unique to school organizations; literacy, general education, and preparation for technical/vocational training and academic/professional education. A broader focus on childcare and socialization outcomes, for example, might have included some nonmandated programs and revenues accounted for in food service and community education funds.

2. Statutes relating to education (Minnesota Department of Education, 1990) and rules of the State Board of Education (Minnesota Department of Education, 1990) were analyzed to identify mandated instructional and support services. Policy mandates tended to fall into one of three categories: 1) procedural, e.g., due process in education of children with handicaps, 2) qualitative, e.g., plans for multicultural and gender fair education, and 3) quantitative, e.g., instructional clock hours in junior secondary school subject areas. Only quantifiable mandates such as required and elective

secondary courses, election of a school board, and employment of a superintendent were incorporated into the model. Mandated instructional and support services were arranged in numerical order of program dimension financial accounting codes (Minnesota Department of Education, 1985).

3. Simulation of school operation basic assumptions about organization and staffing. A K-6-3-3 grade organization was assumed because K-6 modified self-contained classrooms and secondary grade-level subject-matter classes reflected prevailing practice in rural schools, and operating junior (7-9) and senior (10-12) secondary schools in a single plant facility offered more efficient staff utilization in smaller scale operations. It was further assumed that teachers were contracted to teach two sections of kindergarten, one section of grades 1-6, and five secondary classes in a daily schedule of six 55-minute periods with a 30 minute homeroom. Under these work agreement provisions,

Figure 2
Simulation Junior Secondary School (Grades 7-9) Curriculum

Grade 7	Grade 8	Grade 9
Computers 7 (120)	Com. 8 (120)	Com. 9 (120)
Social Studies 7 (120)	Social Studies 8 (120)	Social Studies 9 (120)
Math 7 (120)	Math 8 (120)	Fund. of Math (120)
Science 7 (60)	Science 8 (60)	or
Physical Education 7 (60)	Physical Education 8 (60)	Algebra I (120)
Home Economics 7 (60)	Home Economics 8 (60)	Science 9 (120)
Industrial Arts 7 (60)	Industrial Arts 8 (60)	Physical Education (60)
		Health 9 (60)
		Music 9 (60)
		Visual Arts 9 (60)

NOTE: Science and physical education in grades 7 and 8 and physical education and health will be offered on alternate days to distribute physical education throughout the academic year.

one-credit year-long courses required .2FTE staff and half-credit semester courses required .1FTE staff per section.

4. In simulating elementary school staffing requirements, kindergarten enrollment divided by desired class size divided by 2 (for half or alternate day sessions) yielded a "suggested" number of sections. Planner judgement to accept or alter the suggested number of sections resulted in a "decided" number of sections. The decided number of sections times .5 yielded FTE kindergarten staff. A similar procedure was used in grades 1-6 except that the quotient of enrollment divided by class size was not divided by 2 (because of full-day sessions) and the number of decided sections was multiplied by 1.0 to yield grades 1-6 FTE classroom teaching staff. FTE staff for art, music, physical education, and other specializations were planner input values.

5. Mandated required and elective secondary course offerings at the core of the model were incorporated into the simulated junior secondary curriculum in Figure 2 and the simulated senior secondary curriculum in Figure 3. These curriculums were not regarded as "recommended" or "ideal," but as frameworks for interacting enrollment data with mandated services to estimate necessary FTE instructional staff. Curriculum course offerings were given generic titles suggested by language in the State Board of Education rules. The fundamental importance of objectives, content, and methods in course offerings were acknowledged, but

the purpose of the model was to assess an essential prerequisite condition, namely organizational capability to provide the mandated course offerings.

6. In addition to mandated special education for children with handicaps, the simulation model recognized the importance of differentiated course offerings for all students of varying abilities and career aspirations. For example, students aspiring to careers in chemical engineering and students aspiring to careers in nursing both need chemistry, but might be better served by courses with differentiated content. Senior secondary courses in Figure 3 followed by A and T were intended primarily for students preparing for academic or professional education in four-year colleges and universities and for some students preparing for two-year colleges or technical training. Courses followed by T and G were intended primarily for students preparing for two-year colleges or technical training and for students pursuing general education. Courses designated A, T, and G would serve all students regardless of career aspirations. All courses would be available to all students on an elective basis without deliberate ability grouping or tracking by the school organization. The model was limited to one-credit year-long courses designated (120) and half-credit semester courses designated (60).

7. An intermediate step to convert interactions between secondary enrollment and class size into semester registrations was incorporated into the model to accommodate mandated required and elective year-

Figure 3
Simulation Senior Secondary School (Grades 10-12) Curriculum

Grade 10	Grade 11	Grade 12
<i>Required:</i>	<i>Required:</i>	<i>Required:</i>
Lang. Arts10 A,T,G (120)	Lang. Arts11 A,T,G (120)	Lang. ArtsE1 A,T, (60) and
Health 10 A,T,G (60)	History: US A, T, G (60) and	Lang. Arts E2 A,T (60) or
Phy. Ed. 10 A,T, G (60)	Econ: US A, T, G (60) or	Lang. Arts E3 T, G (60) and
	Politics: US A, T, G (60)	Lang. Arts E4 T, G (60) History: World A, T, G (60) and
		Econ: World A, T, G (60) or
		Politics: US A, T, G (60)
<i>Electives:</i>	<i>Electives:</i>	<i>Electives:</i>
Integ. Soc. St. A, T, G (120)	History: MN A, T, G (60)	Survey: Anth., Soc., Psy. A, T (60)
Geometry A, T (120)	Adv. Algebra A, T (120)	Adv. Math. A, T (120)
Algebra I T, G (120)	(M) El. 1 Bus., Math. T, G (120)	(M) El. 2 Tech.Math. T, G (120)
Biology A, T (120)	Physics A, T (120)	Chemistry A, T (120)
(M) El. 3 Appl. Biol. T, G (120)	(M) El. 4 Appl. Physics T, G (120)	(M) El. 5 Appl. Chem. T, G (120)
For. Lang. AI A, T (120)	For. Lang. All A, T (120)	For. Lang. AllI A, T (120)
Bus. Occ. T, G (120)	Voc. El.1 T, G (120)	Voc. El. 2 T, G (120)
	Youth Service A, T, G (60)	Voc. El. 3 T, G (120)
Music El. 1 A, T, G (60)	Music El. 2 A, T, G (60)	Family Life A, T, G (60)
Vis. Arts El. 1 A, T, G (60)	Vis. Art El. 2 A, T, G (60)	Music El 3 A, T. G. (60)
Other Art El. 1 A, T, G (60)	Other Art El. 2 A, T, G (60)	Vis. Art El. 3 A, T, G (60)
		Other Art El. 3 A, T, G (60)

long and semester courses and a mandate that all students in grades 10-12 have the opportunity to take six credits. To facilitate computations, one-credit year-long courses were treated as two semester registrations. All courses in the grades 7-9 simulated curriculum were required except that students in grade 9 had to choose between algebra I and mathematics fundamentals 9.

8. Secondary semester registrations were distributed among curriculum courses using grade level enrollment and the following input parameters: ninth grade students electing algebra I, grades 10-12 students electing a mandated sixth credit option, grades 10-12 students electing music or art, and graduates

entering four-year collegiate institutions, two-year postsecondary institutions, and not pursuing further education. Pro-rated semester registrations were divided by the input parameter class size and by constants to distinguish between semester and year-long courses to generate a "suggested" number of sections for each course. The suggested number of sections for each course was reviewed and a whole number of "decided" sections was entered as a value by the planner, but in no instance could the number of sections be less than 1 because course offerings were mandated. Decided numbers of sections were multiplied by .2 for year-long courses and .1 for semester courses to determine necessary FTE licensed staff for each course

offering. Course staff requirements were aggregated to a total FTE staff for each accounting code program.

9. Programs and estimated expenditures for students with handicaps had to be custom planned because of a) relatively few students served, b) lack of standardized expenditure cost information on handicap condition by setting of service, c) the necessity of purchasing highly individualized services from other agencies, and d) shared management with special education cooperatives. As numbers of children with particular handicaps increase under simulated combinations of districts, the number of in-district services would be expected to increase. When larger enrollments justified one or additional special education class sections, input parameters for salary, benefits, and elementary instructional supplies and textbooks were used to estimate program expenditures.

10. Total estimated expenditures for each regular and special instructional program were obtained by the aggregation of the following object code calculations:

- a) Aggregated FTE staff was multiplied by the input parameter, average teacher salary, to yield estimated program salary expenditures.
- b) Total salaries were multiplied by the input parameter, percent employee benefits of salary, to yield estimated program employee benefit expenditures.
- c) Estimated expenditures for purchased services, if any, were entered as a value.
- d) Elementary enrollments were multiplied by the input parameter, elementary instructional supply allowance, and aggregated secondary semester registrations were multiplied by a calculated secondary instructional supply allowance per semester registration to yield estimated program supply expenditures. Instructional supply allowances were based on the sum of actual expenditures for general supplies, instructional supplies, and individualized instructional materials during the base year.
- e) Elementary enrollments were multiplied by the input, elementary textbook allowance, and aggregated secondary semester registrations were multiplied by a calculated

secondary textbook allowance per semester registration to yield estimated program expenditures for textbooks. Allowances for textbooks were calculated in a manner similar to the procedure for instructional supplies.

11. While co-curricular, boys and girls athletics, boys athletics, and girls athletics were not mandated, they were included in the model because they are almost universally offered and their inclusion increased validity of revenue-expenditure matching. For these programs, the planner entered program expenditure totals as values based on actual or budgeted expenditures of individual districts or as average expenditures of districts in a similar enrollment size stratification for combinations of districts.

12. In administrative, district support, instructional support, pupil support, operation of plant, and fiscal and fixed cost programs, the planner entered actual or budgeted expenditures if the model were applied to a single district. If two or more districts were considered in combination, the planner had two options for estimating program expenditures: a) aggregating object series totals from detailed planning or b) entering average expenditures of districts with enrollments similar to the combined enrollment of the districts included in the simulation.

13. The model aggregated estimated revenue from accounting code sources that could be matched with total expenditures for mandated programs across applicable funds. State Department of Education printouts from the SDE-FIN database were the preferred source of revenue data inputs for individual and combined districts. Unequalized local referendum levies were deducted from state mandated or authorized property tax levies on the assumption that the legislative intent of referendum levy authority was to allow local communities to provide greater educational opportunity than was included in mandated minimums. If enrollment data projected beyond the base year were used, adjusted revenue totals would be estimated using revenue per weighted pupil unit from the base year.

14. In the final step, total estimated revenue was compared with total estimated expenditure for mandated programs. The relationship between revenue and expenditure did not constitute a programmed decision, but presented the results of a specified treatment of data to yield information relevant to reorganization decision making. Revenue equal to or in excess expenditure indicated that the organization alternative would be capable of providing minimum mandated programs

subject to the input parameters, e.g., average teacher salary. An excess of estimated expenditure over revenue indicated that other organizational and/or delivery system alternatives needed to be explored.

setting and program expenditures were collected from the districts and a special education cooperative that served the districts.

PILOT APPLICATIONS

The following procedures were followed in pilot applications of the model to assess its utility with school district data.

1. The model was programmed into Lotus 1-2-3 Release 3™ run on an IBM PS/2 Model 55SX using simulated data. The three dimensional feature of Lotus 1-2-3 R3™ linked an Analysis worksheet with eight district data input worksheets to assess programmatic viability of organizational alternatives resulting from combinations of up to eight districts. The analysis spreadsheet required extensive planner involvement and was adaptable to local circumstances. A summary profile at the end of the analysis worksheet served as a printed record of inputs and programmatic information for a particular district or combination of districts.

2. The State Department of Education was asked to identify groups of districts that were contemplating some form of reorganization. The largest group contained four districts and was selected because a) all members were low enrollment rural districts, b) short distances between them made some form of reorganization feasible, and c) having four districts provided the best opportunity for testing the three dimensional feature of Lotus 1-2-3 R3™. K-12 enrollments in the four districts were 390, 310, 251, and 390. Superintendents of the districts were contacted to solicit cooperation and assistance with data collection. The superintendents agreed to cooperate, two of the districts had a pairing agreement, but it would be incorrect to say that the four districts were collectively considering reorganization. District data were used only for testing and refining the model and not to formulate organizational alternatives or recommendations for the pilot application districts.

3. A data collection form was developed, pilot tested, and revised. Specific data collection and input procedures used in the pilot applications included the following:

- a) Base year FY 1990 enrollments (ADM) and other input parameter data were collected from the districts.
- b) Numbers of special education students by handicapping condition by educational

c) Revenue simulation inputs were obtained from SDE-FIN printouts provided by the State Department of Education and from audited annual financial reports provided by the districts.

d) District average teacher salary inputs used Minnesota School Board Association (1990) average salary plus benefit information adjusted downward by the statewide percent benefits were of salaries (23.8 percent). The 23.8 percent rate was used as the employee benefit input parameter making total average personnel cost equal to School Board Association data for the base year.

e) Total district program expenditures in administration, administrative support, pupil support, operation and maintenance of plant and insurance and object expenditures for instructional supplies and textbooks were obtained from the State Department of Education SDE-FIN data base.

Experience with data collection indicated that initial data collection from the State Department of Education followed by verification, supplementation, and clarification with district officials would increase validity and efficiency.

4. The model was applied six times in the pilot study. First, it was applied to the four districts individually using data sources described in section 3 above. Results generated by the model indicated that three of the four districts were clearly unable to offer state mandated instructional and supporting services using the prevailing grade level/subject instructional group delivery system. The fourth district was of particular interest because a) it showed an unexpected 2.6 percent margin of revenue over expenditure suggesting ability to support the minimum program, b) raised an error of estimate issue in interpreting results, and c) highlighted the need for ancillary data and informed planner judgement. Ancillary data that might lead an informed planner to conclude that the district lacked programmatic viability included a) an operating deficit of \$109,897 in the General Fund for the base year, b)

certification of a new referendum levy of \$147,749 to be recognized as revenue in the subsequent year, c) a low secondary student ratio of 14.3:1, and d) single sections in each secondary subject requiring maximum multiple preparations for teachers.

Secondly, the model was applied to the paired districts with K-12 enrollment, student input parameters, special education enrollments, and revenue by source being summations of individual district inputs. Combined enrollment of the two districts was 641 students in grades K-12. During FY 1990, 15 Minnesota districts had enrollments between 600 and 699. Average teacher salaries, supplies, and textbooks expenditures for these 15 districts were used as expenditure input parameters. Average total program expenditures from the 15 districts for administration, district support services, co-curricular activities, instructional support, pupil support, operation and maintenance of plants and insurance were entered into the simulation as values. Results generated by the model indicated that their combination would result in a district with marginal programmatic viability.

Thirdly, a similar procedure was followed in applying the model to all four districts in combination. Together, the four districts would have had a combined enrollment of 1,341 students in grades K-12 during FY 1990. Eleven Minnesota school districts had K-12 enrollments between 1300 and 1399 during that year. Average teacher salary, supply, and textbook expenditures, and supporting program expenditures for the 11 districts were used in estimating expenditures for the hypothetical combination. The model indicated that the four districts together would be programmaticaly viable. Estimated revenues would have exceeded expenditure by \$411,053 without \$122,523 in referendum levies.

RESULTS/IMPLICATIONS

The result of the study was not a set of "research conclusions," but development of a planning tool that could be used with school boards and/or citizen committees. Results and implications based on model development, pilot test applications, and feedback from cooperating participants included the following:

1. The programmatic viability model was judged to have sufficient utility as a planning tool to merit use in school district reorganization studies. Its contribution was not in generation of new knowledge about school district reorganization issues, but in the application of decision support systems (DSS) to school district restructuring.

2. The model can be readily programmed into a three-dimensional spreadsheet and incorporate mandated programs, revenue sources, any financial accounting/reporting requirements unique to a particular state's elementary-secondary education system.

3. Concern for programmatic viability could improve district organizational planning by injecting a rational data-based model focused on providing educational opportunity into a sensitive and controversial political process. There were anecdotal indications that actors with vested interests in the status quo would oppose use of the model.

4. A need for a complementary model for evaluating and planning plant facilities was identified. If a particular organizational alternative were deemed programmaticaly viable, decisions to pursue that alternative would require systematically collected and analyzed data on a) capacity, educational adequacy, health and fire safety, structural condition, and handicap access of existing plant facilities, b) bonding capacity and outstanding debt, and c) estimated costs of remodeling and/or construction to adequately house mandated programs in facilities that met building codes.

5. A need was identified for another model to facilitate comparison of pre-reorganization expenditures in districts that may not have offered mandated minimum programs with post-reorganization expenditures in a simulated district which offered programs that equaled or exceeded mandated minimums. A decision to implement an organizational alternative deemed to be programmaticaly viable would require information on effects such as higher personnel costs in larger enrollment districts, economies of scale in class size and transportation, and debt service costs for new or expanded plant facilities.

6. To the extent that they are monitored and enforced, quantifiable state mandates have significant implications for school district organization. For example, Minnesota statutes and rules used in development of the model mandated broad and potentially rich secondary curriculums. Mandated secondary course offerings required 33 year-long courses, 37 semester courses, and a minimum of 11.5 FTE licensed secondary staff in grades 7-12. While the four pilot test districts, in a simulated combination, could have offered the mandated curriculum in a grade-level, subject-matter, classroom-group delivery system, each of them alone lacked the "critical mass" of students to generate the necessary enrollment driven revenue.

7. Interaction of geographic isolation and/or low student population density with state mandated instructional and supporting services has implications for school district organization. Had the four pilot test

districts been widely separated, there would not have been an organizational alternative that could enable them to provide the minimum mandated services. In cases of isolated districts, the model would provide *evidence* that reorganization is not a feasible solution and directs attention toward sparsity aid, distance learning, mobile classrooms, and other alternatives which do not involve district organizational boundaries.

8. Instructional technology has implications for school district organization. The phrases "immunization against reorganization" and "consolidation insurance" were used to describe a State Board of Education rule which allowed *any* of the mandated courses to be offered by interactive television. This rule raised both access and quality issues. Anecdotal data indicated that interactive television was less effective with younger students, poorly motivated students, and not appropriate in classes which involved hazardous apparatus, e.g., wood shops, metal shops, chemistry laboratories, cooking classes, and ceramic arts where professional adult supervision was essential. Likewise, its effectiveness was also limited in courses where hands-on learning and/or participation were important, e.g., general science, biology, physics, office practice, band, orchestra, choral music, and physical education. An account of interactive television physics in one of the pilot districts indicated that students were brought together for hands-on laboratory experiences once every two weeks. Teaching-learning effectiveness was defended as being "better than nothing"—a low standard if excellence in education were taken seriously. The appropriateness of interactive television instruction as a technological solution to an organization problem when secondary schools are a few miles apart is in need of review.

9. The distribution of senior secondary students pursuing general education, preparing for vocational/technical education, and preparing for academic/professional education has implications for school district organization. Experimentation with the model indicated that as the distribution of senior secondary student career aspirations between preparation for academic/professional education and vocational training/general education approached equality, a smaller secondary enrollment would be needed for programmatic viability. Districts with a low percent of graduates preparing for academic professional education would require a larger total enrollment to efficiently offer college preparatory courses. Using low student demand to justify not offering college preparatory courses would deny access to an important educational opportunity in those communities.

10. An implication for further research and development with the programmatic viability model might include adaptation for application in large urban and suburban districts where economic and demographic change suggest a need to replace large bureaucratic attendance units with smaller scale schools that are capable of providing comprehensive educational programs, serving a constructive role in extended neighborhoods, communicating better with atypical families, and personalizing school-student relations.

REFERENCES

- Burke, G. & Rumberger, R. W. (Eds.). (1987). *The future impact of technology on work and education*. New York: Falmer Press.
- Hart, J. F. & Bendikson, T. (1989). Small towns can't stop growing. *CURA Reporter*, *19*(3), 1-5.
- Minnesota Department of Education. (1990). *1990 education laws*. (2 Vols.). St. Paul: Print Communications Division.
- Minnesota Department of Education. (1990). *Rules relating to education*. St. Paul: Print Communications Division.
- Minnesota Department of Education. (1985). *Uniform financial accounting and reporting for Minnesota school districts*. St. Paul.
- Minnesota School Boards Association. (1990). *Licensed salaries and related information 1989-90-1990-91*. St. Peter.
- National Center for Educational Statistics. (1989). *Digest of education statistics*. Washington, D.C.: U.S. Government Printing Office.
- National Commission on Excellence in Education. (1983). *A nation at risk*. (Commission report). Washington, D.C.: U.S. Government Printing Office.
- Stinson, T. F. (1990). *Rural community viability—an overview*. (Working paper 90-101). St. Paul: University of Minnesota State and Regional Research Center.