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Shared Services and Cooperatives

OVERVIEW

Until recently, the only way small school districts could afford comprehensive educational programs was to consolidate. It was either merge completely with another district or be left out in the cold. But in the past few years, school administrators have found a new, less traumatic way to strengthen their programs and still retain their own identities. It's called shared services or cooperatives, and during the past decade hundreds of districts have begun to plan and to operate the kinds of programs that work best on a regional or area basis. The conclusion: cooperation pays

For most of these districts, the first step toward cooperation comes when the administrator faces the fact that his district cannot afford to cope with all the serious problems confronting it. His system needs programs in areas such as vocational and special education but simply does not have enough pupils to justify the expense involved. It needs to experiment with new classroom techniques, but lacks resources to do so. His teachers should be keeping up with new curricula in math, science, biology, physics and social studies. But how can a small district offer the needed training?

In most cases, districts in such predicaments need not look far to discover that they are not alone; frequently, neighboring districts are in the same uncomfortable position. Despite great strides toward school consolidation--the number of districts has shrunk from more than 100,000 in the 1940s to 18,000 in 1970--many districts are still too small to provide comprehensive programs. Nearly one-half of these districts still have fewer than 300 pupils enrolled; more than two-thirds have fewer than 1,200 youngsters.

But if small districts work together there is no reason why they can't have programs just as good as those in larger, more prosperous systems, authorities say. When several districts pool their resources, they can hire psychologists, therapists and other specialists to deal with the needs of all types of pupils. They can support multifaceted vocational education programs and hire consultants in nearly every academic subject area to help teachers. And with children and teachers in several

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districts to care for, these high-caliber specialists have enough to keep them busy and challenged--even in rural areas--for years.

It is not surprising then that many educational authorities point to the shared services concept as a real hope for equalizing education. "Shared service is more than change," concluded the Northwest Regional Educational Laboratory in Portland, Ore., after a survey of such projects in 1968. "It is the vehicle by which access to quality education and equality of educational opportunity is being carried to youth who, by circumstances of residence, are required to attend schools with limited enrollments, limited facilities, often poorly prepared teachers and, more often, limited course offerings."

The survey was contained in a study entitled Identification, Synthesis, Evaluation and Packaging of "Shared Service" Research and Development Efforts in Rural Areas. In the survey, Ray Jongeward, the lab's research and development specialist, and Frank L. Heesacker, then with Northern Montana College, counted some 215 cooperative programs in operation in 1968--most of them serving small rural schools. Jongeward estimates that the number of active programs has continued to climb since then, even in areas where there are strong traditions of local district independence.

Why the move toward cooperatives? First, authorities point out, school administrators all over the country are feeling the pressure for educational change. Traditional educational practices are under attack, and parents want to know what local educators are doing about new techniques, even in small rural districts. Shared service ventures can help these administrators innovate in at least two important ways: It's easier to attract real expertise and assistance, and there's less risk to each individual district when several take part in a pilot project.

Another great boost to cooperation has come from Title III of the Elementary and Secondary Education Act (ESEA), which encourages shared services by providing grants to combinations of districts as well as to single systems. Of the first 217 proposals approved under Title III, over half concerned multidistrict projects. Other federal programs encourage schools to start joint research ventures or to buy instructional materials cooperatively. And in a few cases, even state departments of education have launched large-scale cooperative efforts under Title V, ESEA.

Finally, many new teaching aids lend themselves to cooperative use. Mobile units working out of a central location can send teachers and equipment to widely separated schools. Multidistrict educational television operations and central film libraries are more economical than single-system units--a rule which applies to many forms of new educational technology.

Saving money, however, is not usually the main reason districts decide to cooperate. In reality, additional services usually end up costing the district more--but not as much as if it had tried to provide the extra programs on its own. "Research has shown that additional services are made available less expensively by sharing than by individual acquisition and are frequently of higher quality," says a PREP (Putting Research into Educational Practice) brief digested from the Northwest lab report and made available through the U.S. Office of Education.

Not all cooperatives have been successful. Many co-ops which started at the grass-roots level find financing a never-ending problem that often interferes with the hiring of top-quality staff. District superintendents and local boards may find it difficult to move from a competitive to a cooperative relationship with neighboring school systems, and resulting rivalries can hamstring a sharing project. In some states, laws work against--or even prevent --development of cooperative educational projects.

In states where regional educational agencies have been mandated by law, many of these difficulties are alleviated. But there, too, problems can thwart cooperation: some critics assert that when specifications for the agencies are spelled out by law, the resulting structures are too inflexible to respond to local needs. In some cases, local administrators look on the regional agency as a threatening super-power, and work against it instead of with it. And there's always some difficulty in figuring out just which type of intermediate unit will fit in most comfortably with educational institutions that already exist in a given state.

But there are also definite advantages to cooperation which counterbalance such problems. Three of the most important pluses, according to the Northwest Lab report, are that cooperatives tend to involve isolated administrators in solving problems together, to renew interest in education among citizens and to provide needed services to youth--all accomplished with no loss of autonomy to the local district. Sometimes, the report continues, cooperation results in an overall boost to school morale. When a sharing project begins, teachers often seem more willing to accept new ideas and take more interest in basing instructional decisions on research and development in education. Administrators need not feel they're embarking on a pioneering effort if they try sharing services. "There are enough demonstrations around the country that have been successful," says Robert M. Isenberg, associate executive secretary of the American Assn. of School Administrators (AASA), "that educators can see the possibilities. These examples prove that multiple district cooperation can do many things that school districts were not able to do previously."

PREP suggests seven criteria that educators might use to decide whether their districts could profit from sharing:

- Do your teachers need opportunities to learn new teaching methods.
- Would your school like to offer more vocational experiences for students?
- Does your school need qualified counselors or specialists?
- Do your teachers want more audiovisual materials for their classrooms?
- Does the cost of teacher recruitment need to be reduced?
- Is your school unable to offer students the opportunity to take two or three years of science, foreign language or mathematics?
- Is your school unable to provide special programs for gifted and handicapped students?

Where the response to any of these questions is "yes," PREP says sharing services might be the answer.

In setting up their cooperatives, school districts and other agencies have shown great ingenuity. The following pages present some of the approaches they have used. Experts from the Appalachia Educational Laboratory in Charleston, W. Va., tell how they helped districts in Virginia, Kentucky, Tennessee and Pennsylvania develop and test the cooperative concept. In addition, they--and authorities from other parts of the country--give some pointers schools can use in setting up their own cooperatives, including how to head off problems.

This special report also examines the kinds of services that school districts can profitably share. The examples are drawn largely from the Northwest lab report, which surveyed projects in 46 states. To locate these projects, Heesacker and Jongeward asked colleges, state departments of education and regional accrediting associations to identify districts in their service areas that were working together.

Another part of this report takes a look at how some states have changed their laws to make multidistrict cooperation possible through intermediate education service units. These units give districts a place to turn for help when they have problems they cannot meet on their own. In many cases, they have been set up statewide, so that every district in the state has access to top-quality service programs.

VOLUNTARY COOPERATIVES

When school districts set up a cooperative project on their own initiative, the burden of organization falls primarily on their administrators. It's up to the superintendents of the member schools to make the major decisions about their new educational creation. They must decide how to finance it, where it should be housed, how to govern it and what programs to offer.

If the cooperation amounts to no more than sharing a counselor or another specialist, the organizational details may be minimal. But if the cooperative is to offer sophisticated programs involving many specialized personnel, and if a number of districts are to take part, then superintendents must lay the groundwork for a fairly complex organization. The Appalachia Educational Laboratory, which has helped establish several cooperatives in its region, is drawing up a model for organizing such projects, based on its own experiences. So far, laboratory authorities have pinpointed nine separate decisions they feel are basic: determining location and participants, writing a charter, specifying organization and staff, assessing educational needs, determining what services are required, deciding how to provide them, staging experimental programs, continuing their development, and--finally, adopting the new programs on a full-scale basis.

Necessary Steps for Getting Organized

As soon as administrators have recognized the need for a cooperative program--and can visualize it in operation--they must tackle the problem of organization. One of the first steps, the Appalachia lab spokesmen say, is to draw up a charter which spells out who will belong to the cooperative, what their rights and responsibilities are and how a governing board shall be chosen. To be sure, not all cooperatives draw up formal charter agreements. But authorities generally feel the documents are valuable. In fact, a recent Tennessee law requires that educational cooperatives not only have charter agreements but also have the documents approved by the state department of education and the attorney general to make sure that the form is correct and that state statutes are not violated.

One advantage of a charter which has been cited is that it offers an opportunity to avert later disagreements by clarifying at the beginning of the project any points of possible contention: eligibility and duties of member districts; makeup and selection of the board; financial responsibilities of each district in terms of money, equipment, facilities and personnel; the role of the cooperative's director; and the jurisdictional powers of the cooperative board in relation to member school boards and other organizations involved.

When all this is agreed upon in writing, every district has an opportunity to look after its own interests. "It's much simpler to head off potential problems before they develop than to try to correct them afterward," says Ray Jongeward of the Northwest lab.

One of the first points to consider in organizing a cooperative is what should be included. Although membership may vary with the territory, programs and number of pupils served, most authorities agree that the farthest part of the district should be no more than one hour's drive from a centrally located project headquarters so that the cooperative staff will avoid spending too much time traveling from school to school. Some cooperatives have found it convenient to align their boundaries with those of existing regional economic planning and development districts in their areas. These boundaries generally are based on common need.

Authorities are more reluctant to set any rule of thumb for determining the optimum number of pupils a cooperative should serve. James Kincheloe, formerly of the Appalachia Educational Laboratory staff, said a cooperative needs at least 20,000 to 30,000 pupils before it may produce sizable savings. He set a maximum of 50,000 pupils. But, he pointed out, cooperatives have succeeded, both with more or fewer students. Flexibility also seems to be the rule in deciding how many school districts should participate in a cooperative, and most authorities feel this consideration should be secondary to pupil population and geography. Where counties are the basic unit of school organization, relatively few districts might suffice for a viable cooperative. In other areas, there might be as many as 50 or more participating districts--although educators warn that too many districts can create an unwieldy operation if each has a representative on the cooperative's board.

The cooperative's governing board, the chief policy-making body in most shared-service arrangements, functions much like a local school board. Typically, it is responsible for passing on the budget (prepared by the cooperative staff), approving programs, hiring the director and approving the hiring of other key staff members recommended by the director. "The only model our cooperatives have found to follow is that of the school board and the superintendent," said Kincheloe. "We think there should be some differences in operation--the cooperative has professional educators on its board"--but exactly what the differences should be hasn't been worked out yet, Kincheloe said.

In nearly all cooperatives, the key figures on the governing board are the superintendents of the various member districts. Sometimes the board also includes representatives of other educational organizations, such as local district boards of education or higher education institutions in the area. Less frequently, personnel fro the state department of education are included, either as voting or ex officio members. Still other representatives of organizations with an interest in education have proved valuable as board members.

According to the PREP report, Educational Cooperatives, based on a survey by Larry W. Hughes and C. M. Achilles of the U. of Tennessee, some cooperatives are beginning to include on their boards representatives of business and industry, community action agencies, and local economic development districts. In some cases, even federal agency representatives participate. One Appalachia cooperative, for example, has on its board representatives of the Tennessee

Valley Authority, an organization which took an interest in the fledgling educational cooperative from the beginning. Representatives of local and regional health agencies are sometimes invited to serve on the cooperative boards, too, especially if the cooperative plans to conduct programs in the health fields.

State Laws Can Help or Hurt

One of the most important considerations in organizing a co-op, according to most authorities, is the state laws on education. In some states, legislation makes cooperative ventures extremely difficult. West Virginia's constitution, for example, specifies that funds collected locally must be spent locally. In a number of states, cooperatives may not act as their own fiscal agents. And in Virginia, the state education department cannot provide matching funds when they are to be used for cooperative activities.

Despite such examples, however, some states do seem to be growing more lenient toward educational cooperatives. According to PREP, there were, in the fall of 1970, some 33 states with legislation that permits the development of cooperatives, either in the form of voluntary organizations or as state-mandated regional intermediate school districts. Two additional states, Missouri and North Carolina, have no laws which prevent school systems from cooperating, although cooperatives cannot be established as separate legal organizations. One of the most permissive laws concerning voluntary cooperatives was passed in February 1971 in Tennessee. It allows local districts to cooperate in any way feasible to provide better services more economically.

In states with no recent legislation pertaining to cooperatives, prospective organizers may face another frustrating problem. Frequently, older laws are too vague to provide guidance, and there is no backlog of attorney general opinions or court rulings to spell out precisely what schools can and cannot do. "In states where laws are not specific, court cases may be necessary to interpret the law," said Kincheloe, who encountered that problem in Appalachia.

Financing—One of the Most Difficult Problems

Finding funds for any educational project is usually one of the administrator's most difficult problems. But financing a cooperative, educators say, is often especially trying. Part of the difficulty is cost: A cooperative serving 30,000 to 50,000 pupils may need a stable funding base of at least $150,000 to ensure future operations. Just getting started--hiring a director and a secretary and renting an office--may cost a minimum of $20,000 to $35,000 in an area where educators' salaries are not high.

To meet these expenses, most cooperatives end up relying on a catchall combination of funding. Some get state aid in the form of matching grants--if the law permits; others receive special program grants of some sort. Federal grants have been especially valuable for starting many cooperative activities and cooperating districts are usually in a better competitive position to obtain them than an individual school system. In some cases, too, coopera-

tives have received help from foundations and private agencies or business. But these sources usually guarantee only short-term support. Consequently, all too many cooperatives continuously suffer from financial insecurity.

Authorities agree that the most desirable way of financing a cooperative--at least, in part--is through the regular, continuing support of member school districts. But getting local financial commitment is not easy. Local pressures to take care of local needs by local resources make it difficult to get funds, says an Appalachia lab report. Still, educators stress the importance of regular local district contributions, both as a symbol of real local commitment and as a way to avoid the letdown that often occurs after an initial windfall of outside money is used up. "If schools can't contribute to the project from the beginning," says Ray Jongeward, the cooperative "at least should plan from the start how the project can be transferred to local support later on."

When local districts do help support their cooperatives, most do so on the basis of a per-pupil assessment. Districts can also contribute in other ways, however. According to PREP, schools may be assessed by so much per professional employe or by so much per pupil for specific services. They may also be charged a flat fee for participation. Kincheloe suggested that districts make two separate contributions to a cooperative: a "membership fee" based on the total number of pupils in each district served and a charge for specific programs based on the pupils who participate in them. Then, too, many schools make a part of their contribution by donating their own employes' services to the cooperative. In one district in Appalachia, for example, an assistant principal spends about half his time working for the cooperative to which his district belongs.

Hiring the Right People

The first personnel decision any cooperative must make, of course, is to choose a director. Authorities stress that even in a small cooperative, someone should have full charge of the project. "Everyone's responsibility is no one's," says Jongeward. And if the project is large scale, choosing a good director is crucial since he will be responsible not only for developing programs but also for selling the cooperative to local educators. The Appalachia lab guidelines list the following six duties of a director:

- To provide information about local educational needs and potential solutions to the cooperative board.
- To recommend cooperative programs to the board.
- To coordinate and supervise cooperative staff.
- To suggest policies and regulations for board action.
- To prepare and administer the budget.
- To seek new sources of support for the cooperative.

Who is the "best man" for such a job? According to the Appalachia lab, he most certainly should have a background in education. But just as important, he should be skilled in management, planning and evaluation, says the lab. He should be an excellent communicator, able and willing to devote weekends and evenings to meetings with school staffs and the community. And he should be able to relate smoothly to a board composed of professional colleagues.

Besides the director the cooperative also may need assistant directors for specific service programs, subject-matter specialists, itinerant teachers, and professional staff for social, psychological, medical and pupil personnel services. It may also want to hire specialists for media and communications systems, evaluation, state and federal relations and public affairs.

Obviously, finding such specialists is not an easy job--particularly in the isolated rural areas where, ironically, cooperatives may be most needed. Still, experts say it's especially important to secure topnotch staff members in all cooperative jobs. "They have to have competencies that local district personnel don't already have," says AASA's Isenberg. "Otherwise, how can they assist school staffs?"

Unfortunately, however, there are factors inherent in cooperatives that make hiring especially difficult. The shakiness of many cooperatives makes for high-risk positions that aren't likely to appeal to career-oriented professionals. State laws also may be a hindrance: Cooperative staffers seldom qualify for state retirement benefits or tenure privileges.

About the only real way out of the hiring problem, authorities say, is to pay high salaries. The Appalachia lab estimates that a director gets at least $15,000 to $25,000 in its area. Elsewhere, the figure usually is considerably higher. Administrators also can try appealing to a prospective cooperative employe's sense of challenge. "But," Jongeward cautions, "you usually still pay for the fact that you may not be able to guarantee a permanent job."

Some cooperatives have found ways around the legal restrictions. One cooperative in Kentucky has taken on responsibility for paying what normally would be the state's contribution to the staff retirement fund. In other areas all the cooperative personnel are listed on the roster of a single member school district which pays their retirement benefits.

Find a Place To Operate

Like hiring personnel, obtaining adequate facilities can be a serious problem for cooperative ventures. Most simply end up squatting in buildings that really were intended for other purposes. Part of the problem is that few buildings actually have been specifically designed for cooperatives. PREP points out two possible reasons for this state of affairs: (1) multipurpose educational cooperatives still are so new that few have had a chance to develop special buildings; and (2) in many states, cooperatives' capital expenditures are limited by law and the new organizations must rent or lease existing property--unless a member school district or other agency retains the title.

Still, many cooperatives do manage successfully with makeshift facilities, particularly if staff members conduct most of their services in participating schools. Except for central office staff, for example, most Appalachia cooperative employes spend the bulk of their time working in member schools. The central headquarters of one cooperative, DILENOWISCO, has been housed adequately--if unfashionably--in the basement of a centrally located county school office.

How To Choose Which Services To Provide

Educators say there is almost no limit to the varities of services which cooperatives can provide. But how does a cooperative board decide which services are most appropriate for its area? Appalachia lab authorities have suggested four major criteria for choosing prospective programs:

- The program should bear a logical relationship to previously identified educational needs.
- It should work best at a regional level of operation, because of economies of large scale purchasing or the need to distribute resources more evenly.
- It should have a reasonably good chance of obtaining long-range funding.
- It should be continued only if evaluation shows it to be cost effective in comparison with alternatives.

The Appalachia lab also asks its cooperatives to spend a full year assessing area needs before deciding which programs to undertake. Kincheloe cited this as one of the most important steps in cooperative organization. He also noted that many cooperatives can't afford to wait a full year before starting programs that show some results. To sidestep this problem, some Appalachia cooperatives have identified broad areas of need--vocational education, special education, early childhood education, for instance--and have begun some programs on that basis while, simultaneously, carrying on a formal in-depth study of their area's needs.

Another important consideration in selecting programs, authorities say, is to be sure to give districts something they especially think they need. "Generate services out of demand," says the Northwest lab's Ray Jongeward. "Find out what the people in the community believe they need most and then present them with possible answers to the problem. This approach lasts much longer than the hard-sell method."

Some who have studied shared service projects think it's generally wiser for a cooperative to start out with small-scale programs at first, both to show results quickly and to minimize risk of failure. "It's true that one advantage of a cooperative is that it's big enough to risk some failures," Kincheloe explained. "But it may also be true that a cooperative can perhaps risk no more, early in its life, than a regular school system can."

The Superintendent's Role: Overseeing and Setting Policy

Even after a cooperative has formally organized, the various local superintendents are still the key figures in making it work. As members of the regional board, the superintendents are responsible for overseeing the cooperative and setting its policies. And in his home district, each superintendent must keep up channels of communication, both with his community and with the local district board. In a few cases, rative activities have offered a new opportunity for administrators t alize relations with their home districts. In a Tennessee community example, a group of

superintendents conducted a charrette to give taxpayers--and even students--a chance to say what they wanted from their educational institutions before the new cooperative launched its programs.

In most cases, the superintendent also takes on some new responsibilities for communicating with his staff when his district becomes involved in a cooperative. Ideally, he should keep all staff members informed about plans for prospective cooperative programs and their purposes. Then, when the programs begin to affect specific teachers, he can help clarify their positions in relation to the role of the cooperative's staff. As much as possible, authorities say, clarification should take place in advance--before major problems or friction can arise.

Indeed, some problems are bound to come up. For example, when a cooperative's staff members work in a school, should they be under the direction of the cooperative's director or under the local school principal? In general, the Appalachia lab recommends that all cooperative projects--and their personnel--remain under control of the cooperative's director at all times. Otherwise, the cooperative may lose charge of its own programs. On the other hand, a cooperative's staff must comply with the specific rules and regulations that govern the conduct of regular school personnel. For example, if local teachers can't smoke, neither can a cooperative's staffers.

Participating in a cooperative also requires a superintendent to change his traditional outlook on some important points--a process which, spokesmen concede, sometimes proves painful. "He may have to give up his view of his own district 'first, last ' always,'" Kincheloe said.

If programs vital to most of the cooperative area don't seem important to the superintendent's home district, he may have to accede to the regional viewpoint. He may also have to stop looking on other districts--and their administrators--as competitors. Another painful adjustment for many administrators is getting used to opening school records to outside evaluators from the cooperative, higher education institutions and the state education department. "Some superintendents feel very defensive about this," Kincheloe noted. He said he thought the step was necessary for long-range planning.

And what does a superintendent get in return for meeting these new demands? Kincheloe listed six important ways that superintendents--and their districts--can benefit from such cooperation:

- A cooperative provides a brand new organization, unhampered by tradition and institutionalized patterns of behavior. It tends to become a special vehicle for innovation, which reduces resistance to experimentation. Thus, personnel employed by the cooperative perform as change agents, relieving the superintendent of part of this role.

- The superintendency has frequently been referred to as a lonely job. The reinforcement of other colleagues joined together in risking innovations can do much to reduce this loneliness.

- The stimulation of colleagues and cross-fertilization of ideas have the potential for improving educational practice.

- The cooperative makes possible large-scale economies. This is particularly important to small school districts and for the special educational needs of exceptional children. And the fact cannot be overlooked that several superintendents in Appalachia working together achieve political muscle in dealings with other agencies. In fact, several superintendents in Appalachian cooperatives have noticed how much more receptive certain agencies, such as universities, are to their requests now than they were before the cooperatives were formed.

- The cooperative makes possible a new mix of financial resources by attracting support not available to one district, and makes districts more aware of the kind of support that's available. Despite wide publicity and efforts by state departments of education, local administrators frequently are uninformed about the many financing opportunities available to them.

- The cooperative reinforces the concept of local control. Sensitivity to local demands is retained. "Given today's pressures for change in the schools," Kincheloe said, "it is safe to predict that major change in the structure will come. There are advocates of both federal and state intervention on massive scales. There are great advantages and strengths in retaining as much local autonomy as possible. The cooperative provides this opportunity."

THE APPALACHIA LABORATORY'S WAY

Few areas in this country seem as tailor-made for cooperatives as the Appalachia region. Isolation, mountainous terrain and poor transportation all combine to make small, inadequate school districts the rule. With 532 one-room schools still dotting the landscape, course offerings are sparse, both in academic and vocational areas. Teachers often are poorly prepared, curriculum supervisors are scarce, the ratio of guidance counselors to students is about one to 1,400, and the dropout rate is 10% higher than the national average. Poverty compounds the problem: one of every three families in the region still earns less than $3,000 a year--compared with one in five for the rest of the nation--and only 8.7% of Appalachian families earns $10,000 or more per year.

For all these reasons, the Appalachia Educational Laboratory decided to make development of educational cooperatives one of its chief priorities. By the late 1960s, several other groups, including some superintendents, were beginning to examine the possibility of such cooperatives, too. Together with these superintendents and representatives of other agencies such as the Appalachian Regional Commission, the laboratory has stimulated the growth and development of five multicounty educational organizations--the DILENOWISCO Educational Cooperative (Southwest Virginia), the Upper Kentucky Valley Educational Cooperative, the Tennessee Appalachia Educational Cooperative, the Clinch-Powell Educational Cooperative (Tennessee) and the Pennsylvania Educational Development Center (now phased out because Pennsylvania has adopted intermediate school districts to fill the need for regional agencies).

In its role as stimulator, the lab has given the cooperatives considerable technical advice and some financial help as well. In addition to helping the cooperatives get started the lab has another interest in them: it is studying how the projects work in an attempt to draw up a detailed model for the development of such cooperatives. Lab spokesmen say the agency expects to complete a prototype plan by 1972 which, they hope, will prove useful to colleagues throughout the country.

The lab's model will differ in several important respects from most cooperatives which have grown up elsewhere. First, although providing services is one important objective of cooperatives in the Appalachia plan, its emphasis won't be solely on that point. The lab hopes the cooperatives will help instill some fundamental improvements in the districts involved. "We are concerned both with the locus and the inventions of change--that is, the mechanisms through which change occurs as well as the substantive changes in instruction and curriculum," says Benjamin E. Carmichael, Appalachia lab director and one of the primary developers of the Appalachia concept of cooperatives.

What kind of changes would Carmichael and his laboratory staff like cooperatives to inspire? Primarily, they would like to see traditional educational practices replaced with a more rational, orderly manner for analyzing educational problems and for arriving at solutions. They would like to see educators adopt orderly methods for arriving at change, based on assessment of needs, identification of deficiencies, careful setting of priorities and selection of programs after alternatives have been weighed. Lab staffers hope that if cooperatives begin using such methods to offer better instructional programs, district administrators will be able to see their advantages and will begin using them in their home districts as well.

Besides its emphasis on change the lab's "model" cooperative differs from most existing sharing projects in that it includes on its board both representatives of state departments of education and higher education institutions. In fact, lab staffers place great importance on the participation of outside groups. Without these groups, they say, real educational improvement could be much more difficult.

Local Colleges Participate

Every cooperative founded under the Appalachia lab's auspices has on its board representatives of area colleges and universities. Sometimes these representatives have full voting powers; other times they function in an ex officio capacity. (The decision usually is left to the discretion of the superintendents who form the cooperative board initially.)

In their role as board members, the college representatives often are an invaluable source of advice and program assistance for the fledgling cooperatives. But their presence on the board is even more significant, lab staffers say, because these persons help link the resources of the colleges to member schools on a continuous, meaningful basis. "Most universities want to provide services to schools," said Kincheloe, "but it's physically impossible for them to deal effectively with the needs of individual school systems."

Closer school-college ties could be one of the most important effects of the cooperative idea, Appalachia spokesmen say. For example, they could have great significance for teacher training. "Member schools and the cooperative itself could be laboratories for preservice training," Kincheloe explained. "Student teachers would have an opportunity to work in a variety of schools instead of staying in those near the college campus."

Indeed, some higher education institutions in the Appalachia region have begun to explore ways to coordinate their training activities with cooperative programs. The U. of Tennessee, for example, has been considering the use of cooperatives as sites for training administrators for leadership positions.

But lab staffers believe that college participation in cooperatives has other advantages besides its effect on teacher training. First, colleges often can help cooperating schools to coordinate and develop programs in specialty areas--for example, in early childhood and special education--and to train personnel for the positions the new programs would require. They can

also help train teacher aides. The college, in turn, might take advantage of the cooperative's special television and other facilities to channel college courses to teachers in outlying rural schools. And colleges could, in league with the cooperatives, establish instructional materials centers for schools to use--a service Clinch Valley College is starting to perform for the Southwest Virginia cooperative.

When the Appalachia cooperatives have asked for help from colleges, they have found higher education personnel generally willing to help, educators report. "It's much more difficult to refuse a group of superintendents than it is to refuse a single one," Kincheloe pointed out. And, according to lab staff, the benefits flow both ways: as better prepared students come out of local schools, colleges will in turn graduate better prepared professionals.

The State Education Agency—An Essential Partner

In addition to colleges, Appalachia lab officials also view the state department of education as an essential partner in a workable cooperative. Some advantages of state department participation are obvious: state personnel can serve as skillful advisers to a cooperative, can often bring a different perspective to educational problems and can help hammer out solutions which might require changes at both the state and local levels.

There are also more subtle benefits. "The cooperative provides a mechanism where both local district and state department people are put in somewhat different roles than they fill under normal circumstances," Kincheloe explained. "Sometimes there's something about putting people in a different setting that is very productive." One other reason the Appalachia lab recommends state department participation in its cooperatives is because of the department's influence in writing and obtaining passage of new legislation enabling more extensive cooperative activities. Although none of the state departments in Appalachia has to date taken an open stand in support of the cooperative concept, many state department personnel have been of great assistance to the new organizations and have helped spread the idea in their states. State representatives who sit on the cooperative boards are usually appointed to that position by the state commissioner of education.

Wide Variety of Programs Offered

When it comes to choosing programs for its area, each Appalachia cooperative is free to make its own decisions. All the laboratory asks is that the cooperatives base program selection on a careful assessment of needs, followed by adequate evaluation. The laboratory also encourages the use of up-to-date educational technology--media, mobile facilities and communications--where practicable, to overcome barriers of distance and topography.

Indeed, most Appalachia cooperatives have started out offering programs such as special education, inservice training and psychological services, and many have made good use of technology. Several co-ops, for example, are using a machine called a Drivocator to help teach driver education. The audio-visual machine offers students 30 hours of instruction and tests on the rules

and technique of driving. After mastering its programs, they train for several hours at another machine--a mobile simulator called a "Drivotrainer" -which simulates real driving conditions. After this, students need only three hours of in-car training to complete their course. Under the current arrangement, each cooperative provides to schools within its area a unit with the Drivocator, 10 Drivotrainers and itinerant teachers to help in the simulation and behind-the-wheel training phases.

The laboratory itself has designed two technology-based programs which are being adopted by some cooperatives. One is an early childhood education program, already proved successful by three years' testing in rural Appalachia. The program consists of three parts--television, home visitations and a traveling classroom. Children and parents watch a televised lesson for 30 minutes a day, five days a week. This viewing is supplemented with weekly calls by a home visitor, who acquaints the mother with upcoming lessons and materials, and by a traveling classroom which provides the preschoolers with a group learning experience.

The lab's second program is a vocational guidance system called VIEW (Vital Information About Education and Work). This program's aim is to give students information about jobs in the area for which specialized training is available. Lab staffers collect information about job opportunities in each region and place it on film cards, along with data about the national job picture in the same fields. Schools then buy one set of film cards and a reader-printer. This enables each student to individually pursue information about jobs which interest him. Both programs were designed especially with cooperatives in mind. Each lends itself to regional use and would be too expensive for a district to pursue on its own.

Although many details about the Appalachia lab's model cooperative have already been spelled out, lab spokesmen are quick to emphasize that their model is still in the developmental stage. Many problems remain, and it's probably too early to describe clearly now the model will finally operate. A hint of its form, however, can be seen in the growth and development of the Appalachia test cooperatives.

An Appalachia Cooperative at Work

In the economically depressed region of Appalachia, southwest Virginia is one of the most hard-hit areas. Mechanization and strip mining have greatly reduced the market for workers in the area's major industry, coal mining, and about half the families in the region earn less than $3,000 a year. Not surprisingly, the hard-pressed economic situation is reflected in education as well. The average schooling completed by adults 25 years and older is just over seven years.

Recognizing that major changes would be necessary before education could be upgraded in the region, Benny Coxton, coordinator of federal programs for Lee County, felt the answer might be some sort of cooperative. In 1967, Coxton called together representatives from the Appalachian Regional Commission, the Central Atlantic Regional Educational Laboratory, the Appalachia lab, Clinch Valley College, LENOWISCO (the economic development unit of southwest

Virginia) and interested school systems in the area to investigate the best approach for starting such a project. The result was DILENOWISCO, a co-op named for Dickenson, Lee, Wise and Scott counties and the city of Norton.

The DILENOWISCO educational cooperative came to life July 1, 1968, when the project received a planning grant from Title III of the Elementary and Secondary Education Act (ESEA). "At first it was difficult for the school systems to visualize beyond their immediate boundaries," says Coxton, now DILENOWISCO director. "I imagine it still is in some cases. However, we found that as we got into this cooperative, as we held meetings and brought people together across district lines and discussed basic common problems, the educators and citizens of the area began to be able to visualize on a regional basis."

DILENOWISCO's governing board comprises the five school superintendents involved and a lay representative from each local board as voting members. Representatives of Clinch Valley College, the Appalachia lab and the state department of education are ex officio board members. The board has total authority for DILENOWISCO's operations. It decides on personnel and expenditures and the location and supervision of programs. It sets policies and assumes responsibility for jointly owned property--and for the successes and liabilities of the cooperative. Although the length of time a voting member serves on the board has not yet been determined, the cooperative's bylaws stipulate that when a member ceases to be connected with the local board he represents his membership on the DILENOWISCO board also ends.

DILENOWISCO has spent just over $1 million in planning, developing and implementing programs. Operating funds for 1971-72 are set at $500,000. Initial grants under Title III, ESEA, established the administrative umbrella for the cooperative and enabled DILENOWISCO to plan other programs and to obtain other funding through Title VI-A, ESEA; the Education Professions Development Act; and the Appalachian Regional Commission. Although the cooperative has not yet received financial contributions from such potential sources as industry, higher education institutions, foundations or participating districts, local school systems have donated personnel to work part time for DILENOWISCO and local boards have provided office space. During the 1970-71 school year, DILENOWISCO's staff totaled 43--20 professionals and 23 nonprofessionals. For the 1971-72 year, the number of staff will be raised to 53--23 professionals and 30 nonprofessionals.

For its first year of operations, DILENOWISCO adopted rather general program objectives. It set out to formulate the cooperative, to inform area educators and citizens of newer trends in education and to marshal the combined talents and resources of participating districts in studying common approaches to common problems. To establish precise program goals, administrators organized special planning committees in their home districts composed of representatives of key lay and professional educational groups. These groups met monthly for nearly six months to examine objectives and voice their area needs. Regional groups, made up of representatives of local planning committees, digested local findings and set priorities for the entire region.

After their initial evaluation, the regional groups singled out as their first priority the need to do something about the lack of educational services

for the handicapped. Fortunately, at the same time, a state plan was being completed under the state's Title VI-A, ESEA, program. It provided funds for just the type of diagnostic and follow-up services for the handicapped that the DILENOWISCO area needed. As a result, the cooperative was one of the first organizations in the state to receive a Title VI-A grant, which paid for a special education specialist, a school psychologist, a coordinator of social services, an educational diagnostician and--eventually--a speech and hearing specialist. The special education unit at DILENOWISCO began functioning in June 1969.

The second most pressing problem identified by the planning committees was the lack of services to aid teachers in the change process. To meet this need, DILENOWISCO organized a curriculum unit financed principally by Title III, ESEA (with some assistance from the Education Professions Development Act, Part B2). This unit has enabled more than 1,000 area educators to take local and regional college courses, one of which involved flying a computer to the area so that teachers could participate in an inservice modern math class.

The curriculum unit also has conducted local and regional conferences for more than 2,000 area educators, set up in-depth workshops in local schools involving some 200 teachers in long-range planning and program development, provided one-day media materials workshops for 150 educators and sponsored 18 visits to exemplary schools in Virginia and other states for 300 teachers and administrators. As a result of the visits, the DILENOWISCO staff and local teachers have developed innovative programs using individualized instruction, team teaching and the nongraded approach, and introduced individualized methods at five newly organized reading centers.

DILENOWISCO organized an instructional media unit, which has operated a media center and has helped member schools and school divisions in planning and developing their own instructional resource programs. The unit has disseminated pertinent research and development information to area educators and to the general public.

Two other special programs, a vocational education program called "Four I's" and a youth leadership development program, were begun in the fall of 1970. The Four I's (Introduction, Intervention, Investigation and Involvement) program aims at introducing youth to a broad range of occupational information and providing them with real work and learning experiences. It also offers special activities for elementary and high school students who are two or more years behind grade level. This aspect of the project will consist of a three-year program of occupational orientation, work experience, training and extensive counseling and guidance aimed at placing the youths either in a job or in a regular school vocational-technical program. The youth leadership development program concentrated on familiarizing the region's young people--both high school-age and college-age--with the problems and potential of Appalachia's development.

DILENOWISCO'S staff plans to make more use of technology and mobile facilities, using vans to transport materials from the media center to participating schools. A mobile van classroom will also be used for the Appalachia lab's early childhood education program, soon to start at DILENOWISCO.

A few organizational changes took place in 1971. The curriculum and media units and a new early childhood education unit have been grouped into a single division of instruction; the special education unit and the Four I's program, along with a new K-12 career education program, have been placed in a division of special services. The youth leadership program--and some specialized staff positions in other areas--have been phased out. The changes, spokesmen say, are due to a shortage of funds a..d a need for better program coordination. Another reason, too, is the difficulty the cooperative has encountered in filling highly specialized jobs. As a result, DILENOWISCO plans to make more use of outside resource personnel used as short-term consultants instead of trying to recruit full-time positions.

Whether the cooperative concept will catch on more widely in Appalachia or in other rural areas of the nation is still a moot question. DILENOWISCO staffers admit they've had difficulties: there are problems with Virginia law, a dearth of long-range financing so far, staffing and other dilemmas that typically beset such organizations. But unquestionably, there are administrators and other educators in the region who have put their careers on the line for the cooperative idea. Many believe the future of cooperatives in the Appalachian area probably depends on four major factors:

- Acceptance of the concept by local administrators and educators.
- Legal operating status.
- Firm financial base.
- Up-to-date curricula for use in the cooperatives.

OTHER TYPES OF COOPERATIVES

While Appalachia's programs make an excellent case study, educators point out that they are not the only cooperatives under way. Indeed, there are thousands of school di tricts outside Appalachia that have discovered the value of sharing services often without the help of an outside agent to show them the way. In most cases, their superintendents simply realized that without enough pupils or money to launch diversified programs on their own, cooperation offered the best--and often the only--route to improvement.

Most often program organizers across the nation have used the following methods for starting such cooperatives: Districts may come together spontaneously, with no help from any outside agent; they may be pulled together by a college interested in cooperative activities; or their catalyst may be supported by the federal government or by private foundations. In a few states, the department of education has been the prime mover behind cooperatives.

Spontaneous Cooperatives

When local school administrators themselves recognize the need for sharing services, they often join together in a voluntary spontaneous cooperative. Although few think of them this way, loose "cooperatives" have existed for years, as the Northwest lab report points out, in the form of jointly sponsored athletic leagues, speech contests and music festivals. Sometimes this kind of cooperation can lead to sharing in other areas. When school districts around Havre, Mont., began discussing how to schedule basketball games more conveniently, for example, the talk turned to other problems the schools faced. One administrator discovered that a neighboring district offered one class his students needed, while his schools provided a subject not available in the other district. As a result, the two districts began a small-scale student exchange.

In another step toward sharing, the Havre area schools decided to pool their money and hire consultants to do research and status studies. Each district agreed to contribute on the basis of pupil population, with the largest districts paying about $2,000 per year and the smallest about $500. The districts then signed contracts to formalize their agreement. Since then, the cooperative has ventured into other areas, such as joint purchasing of school buses.

So far, the Havre cooperative has been financed entirely by local funds and backed up by strong commitment from local administrators and board members. Northern Montana College has offered the schools some consultant help.

but most of the work has been done by the districts themselves. Without this commitment, experts say, spontaneous cooperatives may prove short-lived. "This type of organization is more meaningful than others in terms of personal commitment by the administration and staff of the schools involved," the Northwest lab study reports.

The College as Catalyst

Sometimes, school districts get major help in setting up their cooperatives from nearby colleges and universities. The resulting organizations frequently are called school study (or development) councils. One such cooperative, the Catskill Area School Study Council, has been active in New York State for about 20 years. Although school officials in the region had been interested in sharing services, they had not been able to get organized without outside help. The State U. of New York College at Oneonta provided the region's schools with the leadership and know-how necessary to get started.

In 1951, the college offered to assign to the prospective cooperative one faculty member who would spend half of his time as executive secretary of the new organization. His duties would be substantial. He was to help the schools outline programs, see that they were carried out and coordinate involvement of consultants from the college and other institutions. The college paid his salary and provided office space and meeting facilities for the cooperative.

The college has continued to help the Catskill Area School Study Council. It provides the executive secretary and office space for him, and space for a Saturday seminar program for area students. Many faculty members besides the executive secretary help the cooperative, as paid or unpaid consultants. Graduate students have also assisted in various capacities from time to time.

Member schools have proved their commitment to the cooperative by financing most of its $30,000-a-year budget. Each member district pays an annual fee based on pupil enrollment, ranging from about $75 for small districts to $350 for larger ones. Districts decide whether to participate in the study council each year after seeing its projected programs and budget. If any schools want more services than the council plans to offer, they can request that these be furnished on a special contract basis.

Study council programs involve school board members (School Boards Institute Programs), teachers (inservice, planning and development programs), students (Saturday and summer seminars) and members of the community (programs of special interest such as drug abuse). In some instances representatives from all of the above groups will come together. Of particular interest is the work involving the development of special proposals for state and federal assistance to local schools or to the region. The study council has been instrumental in helping with the writing and development of Title III proposals and more recently with an experimental schools proposal.

In the past decade, there has been a dramatic increase in the number of school study councils. PREP says there are now 81 such councils, some of which cover very large geographical areas. (One, for example, is open to schools across the nation.) These study councils commonly engage in such

activities as inservice training and cooperative research. They also share information, film libraries, vocational programs and data processing equipment, PREP reports. According to one recent study, councils ranked inservice education as their most important activity. The councils sampled in the study felt they were least effective in research and evaluation.

Supplementary Education Centers

Probably the most important single force behind the rapid growth of cooperative projects in the 1960s, educators say, has been Title III of ESEA. This legislation gives school districts specific incentives to set up multidistrict supplementary centers and to share services. The major problem with these projects is not getting them started, however. The most difficult part, authorities say, is to keep the projects going after the grants expire.

Authorities point out that three years or so may be too short a time to get a new program fully established and to prove its worth. And even if member districts are entirely sold on the value of a service activity, that doesn't guarantee its future. "The theory is that if schools find a project valuable, they'll find a way to pay for it," says Ray Jongeward of the Northwest lab. "But with the shortage of federal funds and the tax squeeze at the local level, they sometimes can't afford all the things they need."

Many supplementary education centers have found ways around this financial bind--either by phasing over to local support or through additional state or federal funds. A laboratory for treating and diagnosing learning disabilities that serves five small to medium sized districts around Pocatello, Idaho, survived by gradually transferring costs to local districts. Project director Evelyn Thirkill attributes part of the laboratory's success to the great need for the services it provides in the Pocatello area. She also believes that having special education personnel--in addition to administrators --on the board of directors has helped keep interest in the program high.

In Florence, S.C., the PEE-DEE Regional Supplementary Education Center is financed by a combination of local, state and federal money. The center was financed originally by a Title III ESEA grant that provided reading assistance, psychological services, program development and research services to several districts in a depressed area of the state. Ten per cent of the center's annual $250,000 budget comes from member schools, which pay only $1 a pupil for service. The rest of the money comes from state-administered programs and other federal sources such as the Office of Education's Career Opportunities Program.

Foundation-Supported Projects

Like other promising educational innovations, cooperative programs have received substantial aid from some major foundations. In fact, many authorities believe foundation-donated money has encouraged some of the most ambitious, innovative attempts to solve the problems of education in small schools through cooperation. Grants from foundations also have been a crucial aid in financing a few cooperatives that reach beyond the boundaries of a single

state. The Western States Small Schools Project (WSSSP), for example, got its start through a 1957 grant from the Ford Foundation to the Colorado State Dept. of Education. The grant was to aid in developing means to overcome "barriers of extreme distance, severe terrain, population sparsity and other such contrived obstacles as county lines and local tradition" that stood in the way of quality education in Colorado. By 1962, the education departments of Utah, New Mexico, Nevada and Arizona had joined Colorado in the program.

The Educational Improvement Project, an attempt by the Southern Assn. of Colleges and Schools to help disadvantaged youths in several states, also was launched largely through foundation support. The project has fielded a variety of cooperative programs in Tennessee, North Carolina, South Carolina, Georgia, Alabama, Louisiana, Florida, Kentucky and Mississippi, ranging from preschool activities to efforts to help young adults hold their own in college. Funding, totaling about $28 million, has come from foundations such as Ford, Danforth, Mary Reynolds Babcock and Noyes, and from the Higher Education Act and the Office of Economic Opportunity.

But, like support from the federal government, foundation money also has an expiration date, after which project directors must go elsewhere in search of funds. The result often is financial uncertainty for the cooperatives involved. The Educational Improvement Project now is relying on local or state takeovers of some of its projects and is looking for more help from the government and foundations. WSSSP has turned primarily to federal sources.

Statewide Projects

In some parts of the country, the need to improve small schools has prompted statewide encouragement of multidistrict cooperation. In at least two cases, state departments of education have given the cooperatives the push they required to get started. One such effort, the Texas Small Schools Project (TSSP) emerged in 1959, after the Texas Board of Education expressed concern about education in the state's small school systems. Headed by an employe of the Texas Education Agency, TSSP has concentrated on finding ways to offer varied educational experiences to youngsters in the state's smallest schools. Any accredited school with fewer than 500 pupils in grades 1-12 is eligible for help from the project.

Member schools take part in TSSP on three levels: local, regional and statewide. Locally, each school conducts a self-improvement project, exploring new curricula and media and techniques such as flexible scheduling and team teaching. Before starting its project, each school must carry out a self-evaluation to determine just what direction self-improvement should take.

Schools are grouped into regional clusters that make it easier for them to work together on such things as inservice training. Inservice activities also are conducted at the state level each year under TSSP's auspices.

Although the Texas Education Agency provides the project director and part of his staff, much responsibility for the project's activities now rests with member schools, which pay most of the project's expenses. Membership has grown from 18 schools in 1960 to about 130 at present.

Georgia, too, has shared-service programs operating over much of the state. After a study showed that rural districts suffered from serious organizational shortcomings, the governor's office set aside $100,000 from the emergency fund to begin setting up new regional service agencies. Currently, the state has 10 such agencies, the largest of which serves 27 districts. Each agency employs curriculum specialists who train teachers and work with them in their classrooms.

In the Georgia cooperatives, school superintendents make up the board of directors and decide what subject areas need special attention from the regional organizations. The cooperatives are financed jointly by state and local funds. The state education department provides direct cash grants, and districts are expected to match the amount, either in money or in shared personnel.

In Minnesota, the push for a statewide network of cooperatives came more from local communities than from the state department of education. The cooperatives there are called educational research and development councils, although they provide supplementary services and demonstrations in addition to research and development. There are now six councils, which serve the majority of the school districts in the state and some private schools as well.

The Minnesota cooperatives were given great stimulus by the state's Joint Exercise of Powers Act, which permits districts to incorporate and to use funds for anything that a single school system cannot do for itself. Most of the councils are supported by a per-pupil fee paid by member schools, supplemented by Title III, ESEA, money and income from services and publications. Some councils even have special taxing privileges.

Legislation now under consideration in Minnesota would formalize the cooperative network throughout the state into 11 planning districts (called Minnesota Educational Service Agencies). In many cases, the new agencies would follow the boundaries previously set for the research and development councils. Plans call for the new organizations to function much like intermediate service agencies in other states.

Urban Cooperatives

Although most voluntary cooperative programs involve relatively small school districts, large systems, too, can profit from sharing. Several metropolitan areas, in fact, already have set up successful cooperatives. One of the oldest is located in St. Louis County, Mo., where districts banded together in the late 1920s to form an audiovisual cooperative.

Today the co-op is still functioning and offers a K-12 film library with 10,000 prints of curriculum-correlated films valued at over $1.5 million. To make sure all 300 member schools get full use of the audiovisual center, trucks deliver films to them every other school day. The cooperative also provides educational television services and has done research and development under special grants. In addition, it keeps up with legislative developments and maintains liaison with area legislators where educational matters are concerned.

Shared services programs also have grown up in the Cincinnati area, where 18 districts in the Hamilton County Suburban Schools Assn. began working together in 1965 to develop curriculum and to provide other extra services. Over the past six years, educators there have also set up regional resource centers for cooperating schools and a special center to provide an "action research approach" to new curricula and other services.

Even large cities with comprehensive educational programs of their own can gain from certain kinds of sharing--especially from projects which serve as a bridge between the city, its suburbs and outlying rural areas. Portland, Ore., for example, has been using such a cooperative program successfully for several years now, bringing children from the city and the areas around it to five residential camp centers in Multnomah County during the fall and spring. Children from different backgrounds are intentionally scheduled into camp at the same time so that each youngster gets experiences with other children which he could never have in his own classroom.

In southeastern Pennsylvania, educational and community leaders from five counties have formed a "Suburban-Urban Movement" to take a regional approach to planned educational change in the area for children from inner-city Philadelphia and its environs. The program places much emphasis on increasing cultural appreciation between city and suburban residents. A cooperative in the Hartford, Conn., area--the Capital Region Education Council--also operates a program, called METRO, aimed at equalizing regional educational opportunity.

Successful urban cooperatives also are being built on a new partnership between industry and education. In its study of cooperatives, PREP found three common types of urban industry-education cooperation: Specific job training programs and other activities which flow from industry to schools or groups of schools; industry-education councils, where leaders of business and education come together to improve communications among themselves and with the community; and educational councils or research centers, where industry personnel with special expertise help advise schools. PREP suggests still another way that cooperation among urban schools can be helpful: It can give large systems which are decentralizing the larger pupil bases that decentralized districts will need for certain types of programs.

WHAT DISTRICTS CAN SHARE

For most school systems--especially small and medium-sized ones--there is virtually no end to the ways services can be shared. "The number and variety of services which can be shared is limited only by the imagination of the personnel involved," says Roy G. Brubacher, state department consultant to Colorado's Boards of Cooperative Services.

In a few instances, districts have pooled their entire basic educational programs. Two remote Alaska districts, for example, settled on a student exchange: High school youngsters from Klawock district attended classes in adjoining Craig, while Craig's kindergartners went to school in Klawock. In upland Vermont, the neighboring districts of Concord and Waterford have held joint kindergarten classes.

But in the majority of cases, shared service activities are confined to supplementary areas, while basic programs and buildings stay in the hands of local districts. This still leaves much for a cooperative to do, however.

In upstate New York, for example, the Catskill Area School Study Council serves member districts with a wide range of special services. In its early days, this cooperative concentrated mostly on research, giving districts data on school staffing, building programs and financial matters. It also conducted some inservice training.

On receiving a Ford Foundation grant, however, its activities expanded measurably. It brought consultants from all over the country to help area teachers introduce flexible scheduling, new curricula, language laboratories and other new technology. Schools there were among the first in the country to use teacher aides. They shared counselors, nurses and medical staff and set up a central film library under the cooperative's aegis. A special seminar series for gifted youngsters was also started--and has continued up to the present. In 1970, there were 31 Saturday morning seminars for area high school students on topics such as computer programming, Oriental philosophies, cast metal sculpture and criminology.

But not all shared service programs are quite that ambitious. Many successful cooperative ventures have begun on a far more limited basis but have provided valuable aid. In north central Montana, for example, small schools in three counties started out sharing learning tools called MATCHboxes, containing replicas of relics, artifacts, films and other materials to help familiarize children with life in distant places or from historical periods. The schools shared two MATCHboxes, called "The City" and "A Home in Ancient Greece," which cost about $500 each.

The districts chose the MATCHboxes for their first sharing effort because they could not afford a major investment--one school had only four students then. They also wanted something to demonstrate for parents the value of cooperation. The experiment has paid off. Educators report the MATCHbox program has helped pave the way for future cooperation in some districts.

The Northwest laboratory survey lists numerous other kinds of activities --both large and small that can be shared effectively: programs for reading improvement, handicapped children, migrant youth, early childhood education, guidance services, mobile vocational education, vocational counseling, educational television, standardized testing, media and materials preparation, personnel recruitment, computer utilization, cooperative purchasing, bus scheduling, sharing of administrative staff and amplified telephone conference calls.

Some of these shared programs help students directly. Some help teachers. Others concentrate on facilitation of a district's overall program. Here is how some districts have shared services to help pupils, teachers and programs:

Services Focused on the Needs of Pupils

As might be expected, educators report that the bulk of shared service programs set up in recent years has been aimed primarily at helping students directly. Cooperatively, schools have provided such services as guidance, psychological help, enrichment, better libraries and special instructional materials their youngsters may need. Many of these programs help teachers as well, by providing them with access to specialists and other resources which help them do a better job in the classroom. Here are some examples:

Help Provided for Exceptional Children

More schools have pooled resources for special education than for any other type of program, says the Northwest laboratory report. The report's authors cite several reasons. They say relatively few districts have enough exceptional pupils to make financing a program on their own economically feasible. (Usually only about 16% of any one district's pupil population require such services.) At the same time, they point out, there is widespread recognition today that every district should be doing something to meet the individual needs of all its pupils. And awareness is growing that most handicapped children can lead productive and self-fulfilling lives if they have sufficient help early enough.

In Compton, Calif., parents and educators recognized the pressing need of the area's exceptional children several years ago and began to do something about it. Shared service efforts to help the handicapped started in 1947, after a survey by local PTA members pinpointed the severity of the problem. By September of that year, Compton had opened a center for cerebral palsied children. Later on, officials added sight-saving classes for youngsters with severe visual problems and aural education for the deaf and hard of hearing. By 1968, eight districts were working together on a cost-exchange basis to help support the special education facility.

In northern Wyoming, five counties came to grips with the need to help their handicapped youngsters recently, when an adult rehabilitation center that had been caring for the children announced it was overcrowded. Luckily, Wyoming had just passed legislation enabling counties to form cooperative boards. The counties decided to use this approach to set up a boarding school for 60 children with serious mental and physical handicaps. Operation of the new institution, estimated to cost $500,000 for construction alone, will be financed in part through tuition from parents and local district funds. Planning was financed by a grant under Title III, ESEA.

The same sort of multidistrict approach has enabled small rural districts to set up sophisticated diagnostic and remedial centers that would have been unheard of in their areas a few years ago. As a result, these centers can discover learning problems early enough to correct them without disrupting children's lives. In Keene, N.H., a team of specialists treated more than 400 children in a three-year period, providing evaluations by psychologists, speech and language pathologists, social workers, educational consultants, pediatricians, psychiatrists and neurologists. Besides diagnostic work, the center's staff prescribed therapy for speech and language difficulties and for other problems. They have also helped school staff through special resource materials, teaching demonstrations and conferences that enable classroom teachers to cope more effectively with children who have special problems.

Educators in Olathe, Kan., have also kept exceptional children in their regular classrooms by employing a team of experts in cooperation with other schools. Educational specialists from the multidistrict Educational Modulation Center have played a prominent role on the team, working closely with teachers to prepare corrective materials. Special problems have been referred to other team members--social workers, hearing conservationists, psychologists, physicians and neurologists--if necessary. The team also includes school administrators and classroom teachers, who receive intensive training on how to adopt new techniques and materials.

Enrichment Programs

School districts usually share student enrichment efforts for the same reasons they share special education programs--either they do not have enough students to justify extra programs or they lack the resources to make the programs effective. A shortage of students is usually the problem where the gifted are concerned, says PREP, because each district typically has only a handful of extremely able students--and their intellectual needs and interests may vary tremendously. Enrichment for the general student presents difficulties, too. Although more students may be interested in areas like music, arts and the humanities, this is precisely where many small districts are weakest. And, as PREP points out, most small districts can't turn to their communities for assistance. Few have art museums, theaters and symphonies nearby to give them a helping hand.

Through shared service programs, however, many districts have minimized such problems by offering cooperative programs to broaden students' backgrounds. The areas receiving the most attention have been the natural sciences, fine arts, literature, social sciences and government.

Some cooperative programs have managed to give gifted students a taste of nearly all these subject areas. Usually it's been done through stimulating seminars held at a college or some other central location when school classes are not in session. In the Texas Small Schools Project, however, gifted youngsters are excused from classes on regular school days and transported to a nearby college to hear discussions of literature, fine arts, psychology and other topics. The excursions usually include only two to four students per school.

Other districts have concentrated on enrichment in a single subject area, offered at a level that typical students can appreciate. School districts around St. Johnsbury, Vt., for example, have been working with a local natural science museum to supplement their offerings in that field. Under the program, children from 55 districts have come to the museum for lectures and demonstrations arranged by the area supplementary education center. The museum also has offered something for the gifted--a "junior curator" program to spur their interest in science.

Nashville's children's museum has helped districts throughout Tennessee strengthen science programs by sending displays on oceanic studies to visit schools on a tractor-trailer rig. And four districts in Washington state have come up with a novel way to enrich science programs. They chartered a plane to fly fifth- and sixth-grade youngsters over the state for an aerial view of geography, geology and conservation needs.

Youngsters in Washington also have received rich exposure to the fine arts through the Open Doors project, which has been serving the Puget Sound area. Under this program, hundreds of thousands of children have been introduced to the cultural resources of Seattle--ballet, theater, opera and concerts. Although some of the youngsters came from Seattle itself, particularly from the inner city, many others were sent on the cultural excursions by neighboring rural school districts. In nearby Oregon, rural districts in a four-county, bi-state area also have been sending pupils to metropolitan areas, this time to visit art museums during summer vacation periods.

While Oregon students traveled to museums for art enrichment, schools in sparsely settled northern New Hampshire brought artists to the classroom to introduce high quality arts and humanities programs. Working through Project Arise, headquartered in Lancaster, these districts invited well known artists to tour small public and private schools. The program has offered special workshops for teachers and students and a central library with everything from films to weaving looms to supplement the artists' presentations.

Shared social studies enrichment programs have also been popular, and many of them have emphasized acquainting students with ways of life in other countries. In Council Grove, Kan., local schools set up a mobile unit with media and materials on Latin American culture that reached about 2,200 students in rural schools.

Several schools in San Antonio, Tex., hired a foreign curriculum specialist from a university in Brazil to lecture on Latin American culture--a subject of great interest to San Antonio's many Spanish-speaking youngsters.

In some shared enrichment programs, the subject hasn't really been important at all. Instead, these programs simply bring youngsters from different backgrounds together to broaden their experiences. In Weaverville, Calif., for example, eighth graders from rural county schools traded places for a time with students from a junior high in a larger community nearby. In bigger cities, such student exchanges have been aimed at furthering racial understanding. Both Detroit and Chicago have experimented with programs which mixed students from inner city schools with those from other parts of the metropolitan area.

Programs for Minority Groups

Although the problems of minority groups in the nation's urban centers have attracted educators' interest in recent years, many of these youngsters always have--and still do--reside in rural areas. They are found in nearly all parts of the United States--Spanish-speaking in the Southwest and Far West, French-speaking in the Northeast Gulf Coast, Negroes in the deep South and Indians on scattered reservations. Yet, any one district may have just a few of these students. Like other special student groups, their needs can often best be met through cooperative projects, authorities say.

Many small school districts already have begun successful shared service programs for minority group children. In the Caldwell, Idaho, region, the stimulus came from an educational development center which collected research pointing to the attendance problems that plague children of migrant workers. The center's studies helped convince school districts in the area to employ bilingual teacher aides, to start using programmed instruction and to speed up the processing of migrant pupils' records. The center has also developed curricula that are especially suitable for migrant youngsters.

The Small Schools Project in Texas has also helped districts cope with attendance problems of minority-group youngsters--and of Anglo students as well. Project staff compiled statistical profiles describing the kinds of youngsters who were most likely to drop out of schools in various parts of the state. The information enables schools to spot danger signals before it's too late to help.

In the South, the Southern Assn. of Colleges and Schools has set up an umbrella Education Improvement Project to help predominantly black schools in several states. Since the early 1950s the association had been interested in upgrading black colleges in the South and, in the process, staff realized that elementary and secondary schools also needed their help. In the mid-1960s the association began setting up educational improvement projects in various parts of the South, including rural areas like Wheeler County, Ga. and Overton County, Tenn. In many of these projects, personnel from colleges and state departments have been working with local districts to improve preschool education, cultural enrichment activities and the teaching of basic skills. The association has also opened urban centers to develop innovative educational approaches for disadvantaged city youngsters.

Similar projects--although smaller in scope--have improved education for minority groups elsewhere. A program at Devils Lake, N.D., has encouraged

Indian youths to take a greater interest in education and has helped break down cultural barriers. The program has stressed guidance and counseling to keep pupils in school, where they have greater opportunities to learn various vocational skills. Youngsters with high academic potential have been given a taste of college life through a residential program at a local junior college.

French Canadian students along the rural coastal areas of Maine have received indirect educational help through a curriculum development project. The project set out to create a unified English language curriculum for linguistically handicapped pupils in area schools. It concentrated on training teachers and developing materials to back up the new curriculum.

Counseling and Guidance Programs

Some small school districts have shared guidance counselors for years, a fact that is not surprising since many systems can't afford a full-time counselor. But in growing numbers, school systems are turning to cooperative projects for more than just an itinerant counselor. They're getting a full range of pupil personnel services, with diagnostic specialists, psychologists and counselors at both elementary and secondary levels and in vocational education as well.

Just how far-reaching such cooperative efforts can be has been demonstrated by the Upper Red River Valley Project in Grand Forks, N.D. Serving many widely separated school districts (and several parochial schools) in a multicounty area, project staffers have concentrated on five areas:

- Senior Days, where college counselors and industry representatives describe career opportunities in various fields to high schoolers.
- Consultant services to help teachers cope with problem youngsters.
- Testing and test interpretation.
- Guidance services for elementary school children.
- Workshops to train teachers to become vocational counselors.

Whenever possible, project staffers travel to schools to conduct their programs. But when bad weather makes that impractical, they send videotapes to the schools that show important project activities. Videotapes have also been used to train vocational counselors. Interviewing techniques, explanations of group guidance procedures, up-to-date facts on college financial aid and group interaction processes have all been put on tape and shown to prospective counselors. The Red River Valley Project also provides member districts with diagnostic and remedial services concerning retardation and emotional problems. The cooperative's record shows just how great the need for its services has been. During the 1967-68 school year, the staff accepted 582 student referrals and completed 115 family case studies.

Mobile units have been the key to spreading pupil personnel services to schools around Harlem, Mont. A trailer unit pays periodic visits to all secondary schools near Harlem, providing students with vocational and occupational guidance. A team of specialists who travel with the unit includes an educational coordinator, a clinical psychologist, a social worker, a remediation specialist and a research coordinator.

In some other parts of the country, small rural districts are using shared counseling efforts for another purpose: to prepare country youngsters for life in larger cities where many of them may soon be going. In Colville, Wash., for example, a cooperative called Wide Horizons for Rural Youth has taken groups of youngsters to see firsthand the jobs that are available in urban and industrial areas. The project's rationale is that while lectures, reading materials and films may be helpful, they cannot take the place of on-the-job observation. The program also provided an opportunity for college-bound students to visit institutions of their choice for orientation sessions.

The Western States Small Schools Project has tackled vocational guidance a different way. This five-state cooperative has placed "career selection agents" in 14 small schools to teach a special course on occupational opportunities. The special teachers also arrange for on-the-job training and set up field trips, career days and assemblies. A central staff at project headquarters prepares the materials the teachers need to give students an integrated career preparation program.

Elementary counselors--still a rarity in many larger districts--are now beginning to appear in some small rural schools, thanks to cooperative projects. In Sumner, Neb., itinerant elementary counselors cover a three-county rural area, screening children for emotional disturbances, mental retardation or physical handicaps. Local counselors, teachers or administrators then refer such pupils to a school psychologist or some outside expert. The elementary counselors--who trained together at a nearby university--work through central administrative offices in area counties and towns.

Similar programs have been instituted at Elizabeth, Ill., and Hanover, N.H. These programs often use volunteers to supplement professional staffs. At an Elizabeth center, for example, high school seniors, supervised by a counselor, provide tutorial help to elementary students with learning difficulties. The counseling component of the Dartmouth-Lake Sunapee Center for Regional Innovation in Hanover has trained housewives with a high school education as home visitors. Their job is to gather vital information about children in the counseling program.

Media Centers Fit Sharing Concept

As many school districts are rapidly discovering, libraries and media centers are particularly adaptable to the shared service approach. Cooperative libraries give schools a better foundation for instructional programs and they're economical as well. When books and films are in constant circulation, the benefit-to-cost ratio is much higher for each district.

PREP reports a growing use of multipurpose media centers--each serving several districts--which house and repair such equipment as motion picture projectors, slide projectors, controlled readers, opaque and overhead projectors, video and audio tape recorders. These centers usually stock a wide array of audiovisual materials, and many employ staffs to train teachers to make better use of them. Once centralized resource centers are established, schools must then set up equitable circulation procedures--to make sure that schools farthest from the center do not feel cheated. Some projects have

been using mobile units to minimize this problem. In Vernon, Ala., a multipurpose instructional resources center sends materials to students via trailer unit. A supplementary education center in North Dakota uses a similar system for delivering library materials. But its vans do double duty, serving adults as well as children.

In a few areas, administrators have developed plans for circulating materials over entire regions. One of the most ambitious of these programs is in Iowa, where educators devised a regional plan for distributing Title II, ESEA, materials. They designated strategically located county boards of education as regional agencies to purchase and distribute materials in their areas. Individual schools need not buy any Title II materials on their own. Instead, they request what they need from the nearest regional center, which makes regular deliveries and pickups for them. The service takes in private as well as public schools in Iowa.

Under a distribution system set up in St. Elizabeth, Mo., for three mid-Missouri counties, local school libraries have been linked to a central resource center and to regional and state libraries. To make the system work, the schools hired a supervising librarian who helped participating libraries develop uniform cataloging and retrieval systems. They also employed elementary and secondary curriculum specialists to help teachers evaluate existing materials and select better ones, if needed. One of the project's major aims was to make teachers more aware of curriculum resources obtainable through the system. A number of other districts have improved library services by employing consultants on a cooperative basis.

School districts have also found it beneficial to design and share curriculum resources in special subject areas. In South Carolina, for example, educators are using the shared services technique to provide first-class reading programs to a relatively depressed, multicounty rural area. Under the PEE-DEE Regional Supplementary Education Center at Florence, specialists have set up three regional reading laboratories--one each at the elementary, junior high and secondary levels--which provide equipment such as videotape recorders, audiovisual aids and other resources for teaching reading. Around Ellendale, N.D., the Coteau Hills Resource Center helps area districts through mobile units for teaching vocational education. Two units--one equipped for teaching electronics and the other for teaching power mechanics--visit 53 districts in a 13,000 square-mile area. They stay long enough for an itinerant teacher to present the course; then they move on to another district.

While most school districts have confined themselves to sharing conventional media like films or printed materials, a few have ventured into less familiar areas--instructional television, for instance. PREP points to at least three parts of the country besides Appalachia where instructional television is available to rural districts through cooperatives. One of them is northeastern Wisconsin, where Cooperative Educational Service Agency 9 (one of a statewide network of regional service agencies) has set up a nonprofit program that offers high quality instructional television to public and private schools on an economical basis. Another is the area around Umatilla County, Ore., where an instructional media center set up its own broadcast studio and provided programs via cable because rough terrain and remoteness made it impossible to receive the state-operated channel. The Rural Supple-

mentary Educational Center at Stamford, N.Y., also moved into educational television because of poor reception there. The center set up microwave translators on six mountaintops which enable schools in 20 districts to receive videotape lessons and some live educational television as well. In all three attempts to set up educational TV cooperatives, teachers play an important role in choosing programs for their youngsters.

The Stamford center also has made use of another communications device--the amplified telephone--which can make specialized instructors available to the most remote classroom. The center used the telephone hookup to let fourth-grade youngsters studying Eskimo culture talk with Eskimo students in Alaska. Other Stamford-area youngsters who were studying China talked with residents of New York's Chinatown. Several small schools in the Far West have used the amplified telephone to bring students a special art course. Combining a conference call with accompanying audiovisuals, a single teacher conducted art classes simultaneously in 11 schools in four states--Oregon, Idaho, Utah and Nevada.

In a few cases, educators have even used the cooperative approach to provide computer-assisted instruction (CAI) on a regional basis. Under the Northwest Regional Laboratory in Portland, a program called REACT (Relevant Educational Applications of Computer Technology) has brought CAI programs in vocational instruction and advanced mathematics to students as far away as Cascade, Idaho, and Anatone, Wash. Students worked at teletype terminals in their own schools, connected by telephone-line to a computer in Seattle. Students elsewhere in Washington have had an opportunity to use another unusual instructional device--a compact, portable film viewer that gives them lessons on a one-to-one basis in subjects that are often unavailable in rural high schools. Developed by Washington State U., the component has been used to teach welding, physical science, drama and electronics. Professors have been working to develop additional courses, too.

Services Focused on Helping School Staffs

Whatever a school system's size, educators usually agree that the quality of learning depends mostly upon the skill of the teachers. And it's up to the system to see that they have the resources--materials, money and supporting personnel--to keep their skills up to date. For small districts, the task is often difficult--but it's not impossible, according to the Northwest lab report, if schools work together. By pooling their resources even the smallest districts can hire consultants, conduct local inservice training and build up the professional libraries that teachers need to keep up with their fields.

Districts Share Consultant Services

With the breadth of the knowledge explosion, many educators now believe it is almost essential for up-to-date school districts to retain educational consultants. As PREP points out, the use of new media, the introduction of innovative instructional materials and techniques, the tendency for teachers to specialize more themselves--even at the elementary level--all have contributed to the need to keep expert help close by.

Yet, as many superintendents have discovered, it often is difficult to find highly specialized personnel who are willing to live in small communities, let alone accept the salary that a small district frequently is forced to pay. But, by working together, even the most remote areas have been able to hire high-quality consultants to strengthen existing programs and help introduce new ones. In Heber City, Utah, for example, the Northeastern Utah Multi-District Educational Cooperative furnished consultants in language and mathematics which schools there needed to implement new curricula based on individualized instruction. The specialists worked on everything from planning the overall curricula to giving advice on how to deal with spelling problems.

A supplementary education center in Idaho Falls, Idaho, has made it possible for schools in that area to get help in almost every subject area: mathematics, English, reading, counseling, social studies, science, graphic arts and library techniques. Besides furnishing consultants, the center also has assisted districts by keeping them in touch with new educational research and development findings.

The cooperative approach has even brought consultants to some of the nation's smallest schools--one- to five-room operations that still exist in a few remote areas. A mobile unit operated by the Kalispell, Mont., Instructional Resource Center has been bringing special teachers in science, music and art--together with all their equipment--to 26 rural schools in the area, many of which normally have only one teacher to run the whole instructional program. In Everett, Wash., a cooperative has tapped a source of expertise that districts often overlook: it simply asked area residents with special talents or knowledge to serve as consultants in specific fields. Staff members of CORPS for TIM (Coordination of Resource Personnel Services for Total Impact Movement) project reasoned that through the cooperative approach, the same associations, clubs and agencies which contributed to cultural life in individual communities could help serve schools in the entire region. The staff prepared a list of potential consultants in the 17-district region and made it available to local schools. Since the project's chief long-range interest was vocational education, representatives of business, industry and labor were tapped immediately to help teachers set objectives and design courses. The consultants also helped locate summer and part-time jobs for students.

Inservice Training Shared By Districts

In surveys of multidistrict educational efforts, it's hard to find many which don't have some inservice training, even if their primary purpose is to help students or programs. Sometimes the training amounts to nothing more than an effort to make teachers aware of a program's objectives and potential. More often, it involves getting them ready to take advantage of the concepts, techniques or services the program plans to introduce.

Shared services which put their major emphasis on inservice training are not unusual. One of the widest ranging programs is sponsored by the Texas Small School Project. About 500 to 600 teachers from small Texas schools attend week-long workshops in Austin every summer where they learn about new educational approaches. The Small Schools Project also sponsors regional training activities--mostly one-day conferences on specific topics.

Many smaller-scale teacher training programs, most of them aimed at familiarizing teachers with new curriculum advances, have also proved to be valuable cooperative activities. Colleges frequently play an important role in these programs. For example, Kansas State Teachers College helped elementary teachers from several counties in the east-central part of the state to design and use stronger science programs in their schools. The college conducted summer workshops and seminars to introduce one key teacher from each school to the new materials and techniques. Then graduates of the summer sessions held similar workshops to train colleagues from their home districts.

Many cooperative programs have taken advantage of new media to provide inservice training. The Catskill Area School Study Council has designed television courses to teach economics to school staff members who want to learn about the new social studies. The School Administration Dept. of the U. of Nevada has used an amplified telephone system to offer a course on "Crucial Issues in Education" to teachers and administrators in remote areas. The telelecture course is coordinated with texts, tape recordings and transparencies which go to participants ahead of time. After each lecture the trainees discuss essential questions with the lecturer over the two-way telephone system.

The Eastern Illinois Development and Service Unit (EIDSU) in Charleston spent one entire summer workshop showing teachers new techniques--microteaching, videotape playback, study models--that they could use later in their home districts for teacher training. EIDSU also devoted a great deal of its early effort to selling teachers on the value of the cooperative approach to problems. Partly as a result, districts in the 10-county area have pooled countywide libraries and joined forces in various other innovative enterprises besides the inservice venture.

Teachers aren't the only school staff who can be helped through shared service activities. Both the Alabama Assn. of School Administrators and the Oregon Secondary School Principals Assn. have set up internship programs for future administrators in several districts in their respective states. At Havre, Mont., Northern Montana College and districts in a multicounty area conduct joint training for teacher aides. And two medium-sized city school systems in upstate New York--Binghamton and Elmira--have been experimenting with a package that allows them to work as a consortium to train administrators and teachers. District officials expect the joint training effort will lead to cooperation on curricula, teaching methods and staffing patterns later on.

Multidistrict Centers Provide Curricular Services

Besides providing consultants and training, multidistrict projects can also help teachers by supplying supplementary curricula and other materials that further their professional skills. The Northwest lab survey reports extensive use of centers that provide a general range of services. In St. Cloud, Minn., for example, an "educational services council" has been offering curriculum leadership, coordination and stimulation to member schools in 15 counties. The council has concentrated on such areas as mathematics, high school science, fine arts and family life education for K-12.

Mobile units have also been pressed into service to deliver curriculum supplements to remote areas in some parts of the country. At Bayard, N.M., for example, semi-trailer vans have been supplying curriculum materials and instructional aids to seven school systems in 21 towns and villages. Mobile laboratories have been traveling throughout the region, stocked with curriculum services for counselors and for teachers of remedial reading, biological sciences, arithmetic, physical education, industrial arts and astronomy.

Cooperative projects frequently have helped give teachers the guidance they need to make better use of individualized instruction and educational technology. A typical example, says the Northwest lab report, is a supplementary educational services center at Ellensburg, Wash., which has been serving a nine-county area. Local teachers outline the kind of materials they'll need for specific curricula. The center then produces the materials, gears them for individualized instruction, and furnishes special equipment the teachers will need to use them.

In a few instances, districts have joined forces to set up professional libraries for their school staffs, complete with research and development data and other information on new educational trends and practices. Some of these libraries have been set up as part of instructional materials or media centers which also serve pupils. The instructional materials mobile unit at Vernon, Ala., for example, circulates books and media for teachers and students. It also conducts inservice training to help teachers use the materials effectively.

Some cooperative professional libraries cover specific subject areas. Several Minnesota counties, for example, share a professional library of mathematics materials that forms the basis for inservice courses and demonstrations. A resource center in Manistee, Mich., not only provides research data to schools in seven rural counties but also produces an educational journal of its own to interpret the research to local districts.

Services To Facilitate the Educational Program

Probably, most educators view shared services as a way to expand instructional offerings. But many others say they have found the cooperative concept to be a good business tool as well. The Northwest lab report cites several ways districts can pool resources to increase efficiency and cut costs, including cooperative purchasing, personnel recruitment and data processing. And there is still another way that cooperation can help administrators. It can provide the impetus for research and for experimental ventures that may lead to improvements in a district's overall educational program.

Cooperative Purchasing Pays Off

If a school administrator is interested in sharing services primarily to save money, the cooperative purchasing may appeal to him most of all. There is no doubt that schools do save money when they jointly purchase supplies in large quantities. The practice is widespread, both in rural and metropolitan areas. In a 1968 survey, Ralph A. Forsythe and Claude Eugene Hardin found 84 successful purchasing co-ops in operation, serving anywhere

from three to 60 districts. Administrators taking part in these cooperatives cited several advantages to the arrangement: Besides cash savings, the co-ops saved time in placing orders. School officials found that they could control their inventories more effectively and plan for their needs in advance. Further, joint purchasing often led to cooperation in other areas.

With the money they save from large-scale purchasing, many districts have found they can buy additional supplies and equipment they need to offer programs that are usually found only in wealthy or urban districts. The comprehensive regional educational services center in The Dalles, Ore., found, for example, that cooperative purchasing of media saved up to 25% of the usual cost to an individual district. The result: districts could afford a lot more media and materials.

Districts Join Forces To Recruit Personnel

When school districts join forces to recruit their staffs, they usually find two major advantages. First, they no longer have to spend time and money mailing out individual vacancy notices. At the same time, because the effort is regional, each district gets more applicants--often with higher qualifications--than it would have gotten if it tried to recruit on its own. Some cooperating districts have set up a central recruiting agency which prepares a brochure extolling the advantages of living in a given area and then distributes it to teacher placement agencies and colleges. Applicants write directly to the agency which, in turn, advises local administrators of the applicant's interests and qualifications. The regional approach to recruiting has been used by the Eastern Illinois Development and Service Unit and by Wisconsin's Cooperative Educational Service Agency No. 10.

Still more time can be saved in the business office by sharing data processing equipment, says the Northwest lab report. The Curriculum Enrichment Center at Norwich, N.Y., added a data processing center to its library to provide area schools with a spate of services--inventory cataloging, ordering library materials, invoicing and billing. Schools also used the equipment to keep payroll and personnel records and to meet other clerical obligations.

Sometimes districts which cannot afford data processing, even on a regional basis, have borrowed facilities from other, larger organizations. Schools around Lock Haven, Pa., for instance, have been using a computer center at a local college to keep attendance records, assist in pupil placement, schedule and test students and report grades to parents. Seattle, Wash., schools share a county-owned computer with county offices.

Research and Planning—Another Bonus from Sharing

Both a district's central office and its overall instructional program are likely to benefit whenever administrators start joint research and planning programs, educators say. Cooperative efforts enable each administrator to make decisions based on firm information about his system's cost, teachers and pupils. For most administrators of small systems, the cooperative marks the first time such data have been available at all.

Schools sharing research programs may set up a special operation of their own for that purpose or they may take advantage of research expertise at nearby universities. They may contract for studies of problems that affect the whole region--or they may ask researchers to concentrate on the needs of each individual school. Many cooperative research activities, like the Catskill Area School Study Council, manage to perform both kinds of research at the same time.

A sampling of the booklets produced by the school study council shows the variety of subjects that small schools might want to research. Besides a wealth of financial information, the council has published pamphlets on such diverse subjects as school aides at work, learning in small groups and helping children learn how to study. It has also done surveys to find out what teachers in the region need in economics and social studies, elementary and secondary science, audiovisuals and other areas. Information gleaned from these studies has helped some participating schools move from traditional programs to classrooms which feature individualized instruction, flexible scheduling and new curricula of various sorts.

Other cooperatives have also helped guide small schools toward new techniques for organizing the classroom. Some of the most extensive work in this area has been done by the Western States Small Schools Project, which has helped isolated schools in New Mexico, Arizona, Colorado and Nevada experiment with a gamut of innovations: programmed math and English, nongraded elementary classes, computerized modular scheduling and various self-instructional programs. The experiments were aimed, in part, at helping small schools offer a diversity of programs despite their small staffs.

Other Cooperative Ventures Listed

While the sampling of shared service activities in this chapter is far from complete, it does illustrate how many different ways schools can join forces to improve their educational programs. The Northwest lab report suggests still other areas that might lend themselves to cooperation: hot lunch programs (some of them carried by mobile units), driver safety education programs and health services of all kinds. The survey also suggests wider use of cooperative professional libraries to give teachers more materials to back up extension courses and other inservice work.

INTERMEDIATE EDUCATION UNITS

One of the major obstacles to the growth of shared service programs, educators say, has been their lack of sanction by state education laws. In many states, districts in neighboring counties are prohibited by statute from setting up joint boards of education to govern cooperative projects. In others, cooperatives cannot qualify for educational grants from the state--a snag that imposes severe financial limitations on program development.

But recently educators have been experimenting with a new, broader form of shared services that is free from these restrictions. Made possible by changes in state laws, a special multidistrict school authority has the job of providing special services to groups of school districts. Its name: the intermediate educational service unit.

In some ways, intermediate units function just like other cooperatives. They offer sophisticated, expensive programs to a number of local districts which use--and pay for--services on a cooperative basis. But intermediate units also have important advantages that less formal co-ops cannot match. They are a recognized part of the state's educational structure, with their functions spelled out in state law. Many receive considerable amounts of money from state departments of education, as much as local districts do. As a result, authorities say, intermediate units possess more stability--and stand a better chance of survival--than almost any other cooperative arrangement.

The growth of these new agencies has been one of the fastest--and, according to many authorities--one of the most significant educational developments of the past decade. Fourteen states now have intermediate service units of some sort operating in their territory or have passed legislation to permit their establishment. And more seem to be on the way, if legislation pending in some states passes.

While many of these new intermediate units serve a broad area encompassing several political subdivisions, most comprise only a single county. But as spokesmen for the intermediate unit concept are quick to point out, the new organizations scarcely resemble traditional county boards of education. In fact, authorities say, such units often have been established precisely to replace traditional county boards which have outlived their original functions.

As reorganization has made rural districts larger and more self-sufficient, the need for county office supervision has diminished. At the same time, however, new needs have arisen. Even reorganized districts often are too small to mount well rounded programs in vocational and special education,

inservice training and other areas which require large enrollments. Many states have solved the problem by simply abolishing county offices--and replacing them with intermediate service agencies.

Like county offices, the units are "intermediate" agencies in the sense that they stand between state departments and local districts. But unlike county offices, their chief mission is not regulation and supervision in most states. It's to provide districts throughout a state with top-quality service programs.

What Are the Issues?

Setting up intermediate education units is just like creating any other entirely new institution--it requires a great deal of careful planning and thought. The new agencies must be tailored to fit into a state's educational system without disrupting existing relationships. They must begin a wide, new range of service activities without duplicating those already in existence--and without stepping on prerogatives of other agencies.

How can states go about this delicate process of creating intermediate units? Authorities say there is no one answer that applies to every state. Each unit must be shaped to fit individual state traditions and needs. But Robert Isenberg of the American Assn. of School Administrators, a recognized authority on intermediate units, notes the points on which educators seem to agree. Among them:

- There should be a definite state plan for establishing the new units and their areas should be approved by the state department of education. Otherwise, their development may be haphazard.

- Each unit should cover a large enough area to include the pupil base necessary for sophisticated programs--ideally, 60,000 to 100,000 youngsters. "If there's a question," Isenberg says, "it's better to make them too large than too small. You can always divide them into smaller units if they're too large, but if they're too small, it is never possible for significant service programs to ever really get under way." (In some parts of the country, however, this ideal may prove unrealistic because of sparse population. Only four states--Colorado, Michigan, Ohio and Texas--specify a minimum pupil population for their regional units, and their figures range from 5,000 to 50,000 students.)

- The scope of regional program activities should be comprehensive rather than special-purpose, with an emphasis on flexibility. Educational needs among local school districts vary in different parts of a state, and they change continuously.

- Only programs of the highest quality should be undertaken. That's why the new units were set up in the first place.

Units in most states share certain characteristics, too. Their services are usually available to all public schools within their territory (and often to private schools as well); most provide additional services to individ-

ual schools on a contract basis; most are run by governing boards chosen directly or indirectly by the people.

Despite these points of agreement, however, several important questions about what constitutes the "best" intermediate system remain. How should they be financed? What specific services should they offer? Should cities take part? How much authority should the new agencies have?

Should Intermediate Units Be Autonomous Local Agencies?

In most states, intermediate education units function somewhat like local education agencies, with independent governing boards which set policies and plan programs. This arrangement, most authorities feel, gives the units the flexibility they require to provide whatever services are most needed in their areas. At the same time, however, authorities caution that the units should not have so much independence that they overpower local school districts. Instead, a system of checks and balances should be applied which protects local districts and--at the same time--leaves the intermediate agency enough authority to do its job.

In many states the unit board itself serves as a safeguard for local districts. Local school boards elect the people to serve on the unit board, often from their own membership. Another safeguard frequently employed is to set up councils of administrators from local districts to advise the unit staff. Few states require these advisory councils in law; nonetheless, nearly every intermediate system has worked out some arrangement that gives district administrators a say in unit operations. In some intermediate agencies, unit staff members in charge of specific program areas also work closely with advisory groups composed of local school personnel in their fields.

A few states have gone even closer to local district control by giving member school boards power over their unit's purse. In Michigan, for example, district boards review and approve intermediate unit budgets. In Oregon, units must have the approval of a majority of the school boards in their regions to levy taxes.

Indeed, many feel that budget approval power is the most certain means of guaranteeing that intermediate units stay responsive to local needs. "It keeps everybody honest," says E. Robert Stephens, associate professor of educational administration at the U. of Iowa.

On the other hand, experts also caution that the new units should have some money to spend on their own. Otherwise, they can easily be rendered helpless. As a compromise, Isenberg suggests giving intermediate units complete authority over some funds. "It doesn't have to be much--perhaps as little as $3,000 or $4,000," he explains. "But it should give the unit a chance to hire consultants to show what needs to be done."

Most states also give districts the right to say "no" to specific services which their unit offers--an approach many experts believe has definite advantages. "Suppose a district creates its own program, even if it's small-scale, and then someone from the unit says it's no good," Isenberg notes.

"District personnel can't help feeling resentment, and they may never admit the new program is as good as the one they already put their hearts into," Isenberg says. He thinks one good approach is to let each district recognize the value of the intermediate unit in its own good time. According to most authorities, districts usually do reach this point rapidly if their units offer top-quality programs.

Is it possible for an intermediate unit to clip the wings of a local school district? Those who favor the unit approach concede that this can happen. They insist, however, that it comes only when a legislature gives its units powers they don't really need to carry out service functions. "There's nothing in the unit concept itself that should interfere with local district prerogatives," Isenberg points out.

An Alternative—The State Department Branch Approach

If officials have doubts about giving intermediate units the authority of local education agencies, one other alternative is open. They can set up agencies as regional branches of the state department of education.

Those who favor the state department branch approach point to these advantages: First, state departments often have people on their staffs with the expertise to provide unit services. Second, the system enables officials to develop and coordinate new programs evenly throughout the whole state. Finally, state resources can provide financial stability that more autonomous units might find enviable.

Those who favor the local agency approach, however, point to potential dangers in the state agency branch system. For one thing, they note, under a statewide system, both staff and job descriptions probably would have to conform to civil service regulations--a factor that might limit flexibility.

Also, state departments might be tempted to shift too many administrative duties to their regional branches, eclipsing services there. And, while the branch system might encourage uniform program development throughout a state, if resources are limited, the programs might be universally weak. By contrast, they say, under the local agency approach, units which want to start more ambitious programs are free to forge ahead on their own.

No matter which structure a state chooses, however, authorities say there should be close linkage between state departments and intermediate units. State department backing nearly always has been essential to get intermediate unit legislation passed, and once the units are established, they must conform to state education policies and regulations. Many units serve as a channel of communication between state departments and local districts, and some manage to carry out a few regulatory functions without sacrificing services.

Even authorities who strongly favor the local agency approach say that intermediate units can be effective as state department branches if pitfalls are avoided. "Certainly, this is one workable way of doing it," says Isenberg.

What Happens to County Offices?

Establishing intermediate education units usually has a dramatic effect on one other part of a state's educational structure--the county school office. In most states, officials have simply abolished county offices when the new agencies were put into operation. Only two have kept their county offices intact--Nebraska, where county offices have minimal service functions, and Texas, where units are so immense that educators feel some other intermediate agency is still necessary.

Ironically, however, in most states it has been the county school officers who have been the prime movers in the effort to establish regional agencies. Frequently, associations of county school officials have initiated the studies that made the need for larger intermediate service organizations evident. Thus, states have generally treated displaced county office personnel gently, often giving them key posts in the new structures. In Pennsylvania, the law guarantees them first chance at top unit positions.

How Should Units Be Financed?

Closely related to the question of autonomy for intermediate units is the problem of how they should be financed. Should they have the power to levy their own taxes? Should they be financed largely from the state capital? Or should they be dependent on participating districts for support?

Many experts refuse to generalize on the financial question, pointing out that the answer depends largely on each state's overall plan for financing education. And, authorities point out, most financing methods have weaknesses as well as strengths. For example, state financing is usually regular and dependable. But many states traditionally have underfinanced state-level service programs. So why should they finance regional services any more generously? If units are dependent on participating districts for funds, local control is assured but their service programs may never get off the ground. Most authorities agree that to give units some taxing power is a good way to ensure program flexibility. Legislators in many states are reluctant to create new taxing authorities and in New York State it's unconstitutional.

Many legislatures also have been reluctant to give the new units the power to incur long-term debt or to own real property. These limitations have created real problems in some states. Currently, only those units in New York and Michigan can hold title to real property, and in New York, ownership comes through a roundabout method: Intermediate agencies borrow money from the state's dormitory authority and repay it over time in the form of rent. In other states, units sometimes have been forced to make do by converting unoccupied buildings and other temporary quarters. Experts say the problem is especially crucial in rural areas, where suitable facilities are usually occupied--if they exist at all.

In states which have given their intermediate units taxing authority, it has often turned into a valuable tool for equalizing education. In Oregon, for example, intermediate units levy taxes uniformly throughout their

areas. Michigan units also employ tax equalization features. Of course, even these efforts do not contribute to educational equalization in different parts of a state, but they do help at least within the unit's territory. Some further equalizing effect comes through state aid, and the tendency has been for states to provide more money to support intermediate units than they gave county offices, authorities say. And even when states don't provide extra funds, economies resulting form regional operations often make the money go further.

What Kinds of Services Should an Agency Provide?

Once an agency has been organized and its financial foundation made firm, a major decision still must be made about what the new unit is supposed to do. Should it stick to providing special services, or should it take on administrative and regulatory responsibilities, too? Some who have worked closely with intermediate units feel that the focus should be kept on providing services. Prof. Robert Stephens, for example, fears that if a unit takes on too many administrative jobs, it can end up neglecting the service end of its job. In at least one state, regulatory responsibilities given to intermediate agencies backfired against the whole unit program. When the units were asked to help reorganize school districts, the localities which opposed redistricting then refused to cooperate in unit-sponsored service activities.

On the other hand, many units have proved that certain administrative tasks can be carried out better on the regional level than they can from the state capital. For example, when a New York unit was given the job of handling teacher certification, it cut a nine-month backlog in Albany to almost no waiting period at all. In Michigan, units have been auditing each school district's budget and student census to the satisfaction of both local districts and the state agency. AASA's Isenberg suggests units might also handle jobs such as adjudicating school boundary disputes, interpreting new state laws and regulations and even helping to plan school reorganizations. But he cautions that it might be best to give such responsibilities to the new units after they've had time to build strong rapport with local districts.

Most authorities also suggest that units consider another major point in planning programs--they should avoid taking on so many different services that they can't do a top-quality job in any one area. "There are more things that a regional agency needs to do than it can possibly do well," says Isenberg. "The agency must establish priorities based on what it can accomplish."

Even worse, authorities say, agencies may end up doing things that districts should do themselves and possibly even perpetuate inefficient school districts. Most authorities insist that units should only do things which local districts cannot afford to do on their own. If the units do begin innovative small-scale programs as examples to school districts, these programs should be pushed onto member districts' shoulders as soon as possible. Ideally, says Isenberg, units should always be moving toward higher-order functions--diagnostic work, clinical services, inservice training. "The danger," Isenberg points out, "is that once a unit has started a program, they'll keep doing it just because they have an item for it in their budget."

Should Cities Be Included?

In earlier days, major cities usually were left out of intermediate unit territory, often by choice, because they felt they could provide all the services they needed on their own. In New York, for example--site of the earliest unit development--the state's six largest cities were excluded from the intermediate system by law because the program was conceived largely as a boost for rural schools.

More recently, however, experts say the trend has been to include large cities, or at least to give them the option of joining intermediate units if they wish. In Iowa, Michigan and Washington, for example, cities are included as full partners. In Colorado and Nebraska, city participation is optional (and many cities have chosen to join).

In Pennsylvania, legislators solved the problem by making Pittsburgh and Philadelphia independent intermediate units. The Philadelphia unit includes the surrounding county, which traditionally has been under the jurisdiction of the city board of education.

The chief advantage of including the cities, experts say, is the value of building bridges between the city and the area around it. City participation also makes it easier for units to engage in long-range regional planning, a task which often brings them into a close working relationship with other regional organizations such as economic development agencies.

Cities can also present a problem, however, experts caution, when it comes to electing a regional unit board. Laws frequently provide that agency boards can have no more than one member from each district--and cities, with their huge pupil populations, may feel underrepresented.

One way around the situation has been used in Pennsylvania, where boards are elected according to a weighted vote that allows for proportional representation. In some other states, part of the board is elected at large.

What the States Have Done

In reality, authorities say, there is probably no one way to form an intermediate education agency. Each state must set up units which correspond to its traditions, its existing educational arrangements and the local political climate. But the variety of units which have been functioning effectively in the states proves that high-quality programs can be provided under a number of different legal frameworks.

The new organizations go by many different names: In Michigan and Washington, they're known as intermediate school districts; in Wisconsin, they're cooperative educational service agencies; in Nebraska, they're educational service units; and in New York, they're boards of cooperative educational services. Laws regulating the units vary widely, too. Some states have created highly autonomous organizations, while others have subordinated them to local districts or to the state department. Here, arranged roughly in order of independence, is how units work in fourteen states:

Michigan—Intermediate School Districts

In many ways, the intermediate districts in Michigan are typical of such organizations in most other states. They are governed by lay boards of education which hire the intermediate district superintendent and other key staff, set their salaries, draw up each year's budget, plan service programs and see that they're carried out. (Members of unit boards are nominated by petition and elected by local district boards.) Units are eligible for state aid and can contract with local schools on a reimbursable basis.

But Michigan's units also have additional powers which place them among the most independent and autonomous intermediate agencies in the nation. Under current state law, they can levy taxes for vocational and special education, issue bonds for capital spending and buy property or put up buildings --all privileges which few intermediate systems possess. Michigan law guarantees local school districts a role in the units' operations. Intermediate units must submit their budgets to local boards for approval; local school administrators customarily help units select and plan services; and no district can be forced to take a service it doesn't want.

Michigan has been moving toward the intermediate unit concept since 1949, when laws were first passed permitting establishment of regional boards of education. In 1962, the movement accelerated when the legislature required counties with less than 5,000 pupils to consolidate and form intermediate districts. By 1971, 59 intermediate districts had been formed, some of them involving mergers of two or more counties. Although many single county intermediate districts still exist, they have had no ties with other segments of county government since 1964. Some Michigan educators believe it will take still more multicounty consolidations before intermediate districts reach their full potential for service there. Most mergers so far have been in sparsely settled rural areas.

Nonetheless, some single-county intermediate districts--particularly those in metropolitan areas--have come up with the most comprehensive programs. Many provide special and vocational education, operate centers for diagnosis and prepare new instructional materials. They carry on educational research and testing and provide data processing services. Besides training teachers, counselors and administrators, they help cooks, bus drivers, office staff and maintenance personnel learn their jobs. Many units also serve as a central purchasing agency for food, paper stock, machinery, fuel and buses.

Iowa—Regional Educational Service Agencies

While Iowa's regional units have slightly less autonomy than those in Michigan, they're still more independent than intermediate agencies in most states. Although Iowa units can tax to support their programs, they cannot float bonds for facilities or own real property. On the other hand, Iowa units do not have to submit their budgets to participating local boards, as Michigan's must. Still, Iowa educators insist their units are quite responsive to local districts, in part because the state has a strong tradition of local control and unit board members respect it.

Intermediate units have evolved gradually in Iowa through a series of laws permitting more cooperation among school districts. Cooperation has been possible on the county level since 1947, when new laws gave each county the right to elect boards of education with the power to levy taxes. After statewide studies pointed to the need for further consolidation, the legislature gave county boards the right to hire a single superintendent to run systems in more than one county. The new law, passed in 1957, also permitted counties to sponsor joint service programs.

In 1965, however, the regional concept really took hold in Iowa when the legislature authorized formation of merged county school systems. Under the new law, counties can combine their boards of education into one cooperative (upon approval of the voters and the state board of education). The merged counties function as regional service units, much like enlarged local education agencies. Each regional board has seven members: six are elected from predesignated political subdivisions and one is elected at large.

By 1966, the first merged county system had been formed in Iowa, and by 1971, nine regional units had taken shape. A state plan, which spells out unit boundaries, calls for eventual formation of 16 regional agencies to take in all school districts in Iowa. Boundaries of the new units generally correspond to those previously set for community college and area vocational school districts.

While the nine units in Iowa have reached various stages of program development, nearly all now provide some special education services. Many of them also offer educational media services and provide central film libraries and media consultants for schools. Some units also furnish curriculum specialists in various other subject areas and a few are moving into data processing.

Nebraska—Educational Service Units

Nebraska is another state where independent intermediate units coexist with a strong tradition of local district autonomy. The desire for local school control in the state has been so strong, in fact, that it has hindered school reorganization. In 1965, when the intermediate unit system was passed into law, only 163 of the more than 2,000 Nebraska districts had over 300 pupils, and some educators there viewed intermediate agencies as a way around this dilemma.

The Nebraska legislature came up with a plan to blanket the state with 19 intermediate units. The units would be governed by popularly elected boards --to consist of a representative from each county plus four members elected at large--with considerable independence. The board would have both the power to tax and to purchase property. Although the law kept the tax rate low--only one mill on the dollar--unit boards would be largely free to decide how to spend the money collected. Local autonomy was protected in the Nebraska plan by making it very easy for a county to pull out of its unit. Any county could refuse to take part--and thus escape taxation--if membership in the unit was voted down in a referendum. And if only a very small percentage of the county's citizens objected to the unit, the issue had to be placed on the ballot.

A statewide effort to defeat the unit system was organized shortly after the legislation was passed, and petitions for withdrawal were filed in 79 of the state's 93 counties. In the final analyses, however, only 19 counties voted themselves out of their units, and over 90% of the state's population took advantage of the new service programs.

Since the intermediate units have become more firmly established in Nebraska, new laws have made county withdrawal more difficult. In addition, the number of units has been reduced--from 19 to 17. Although funding for unit programs has remained somewhat limited due to a low tax rate and minimal state aid, many Nebraska units have been active in special education, vocational rehabilitation and instructional materials centers.

Oregon—Intermediate Education Districts

Oregon's intermediate education units enjoy considerable independence, although local districts and the state department of education retain some control over their activities. While the units can levy taxes and launch new programs, all such moves must be approved by two-thirds of the member school districts which, taken together, enroll a majority of the pupils in the service area. If the services offered are to be financed by taxes, the state superintendent also must approve the plan. If a unit provides services to districts on a reimbursable basis, however, it needs no outside approval.

Units offer such things as instructional media, inservice training, special education and group purchasing. But since nearly all the state's 29 units operate at the county level, some lack enough pupils to develop full-scale activities. Although legislation permitting multicounty mergers has been on the books since 1965, only one merger has taken place so far. In addition, six counties in the state are outside the intermediate unit structure altogether.

Oregon did come close to adopting a true regional unit approach in 1969, when a study commission recommended that all 36 of the state's counties be grouped into 15 units. Although the plan came very close to passage, legislators could not agree on a taxing formula and the entire program was dropped at the last minute.

Wisconsin—Cooperative Educational Service Agencies

Of all the statewide intermediate unit plans in existence, Wisconsin's probably does the most to keep the new agencies under local district control. As Wisconsin educators point out, that state's very conception of what an intermediate unit should be differs from what most states are developing. The Wisconsin unit "is designed not as an agency for providing services but to facilitate and coordinate the development of multidistrict service programs over which it exercises little control or direction," said John R. Belton of the Milwaukee public schools in an issue of Journal on State School Systems. "It is a catalyst. It is conceived as organizational machinery to make regional service programs available while permitting local school districts to maintain complete autonomy."

Wisconsin's weak intermediate unit system is more the result of political necessity than design, authorities say. A study conducted by the State Dept. of Public Instruction and the U. of Wisconsin actually recommended a much stronger type of unit, with power to tax and with major responsibilities for leadership and service. But the proposal failed to attract the support of Wisconsin's local educators and board members, and a compromise brought the present Cooperative Educational Service Agencies (CESA) into being.

Under the compromise legislation, passed in 1964, the 19 CESAs, blanketing the whole state, were created chiefly to help local districts coordinate their own cooperative programs. Units can provide services only at the request of local districts; they have no authority to initiate programs on their own. Administrators from local districts form an advisory committee which helps unit boards make decisions.

Financially, units are almost entirely dependent on contracts with local districts for support. Their annual state subsidy, now $39,000 per year, chiefly covers only the cost of administering each unit, although units now can use any money left over to obtain consultant services for member schools. Districts, of course, can refuse to participate in unit programs if they wish.

Without authority to initiate services, some agencies have had a difficult time developing active programs. But several have helped districts in their areas to organize cooperative programs under Title III, ESEA, grants.

At least one agency has an active educational television program going. In addition, four regional data processing centers are being set up in Wisconsin on the basis of the agency's geographic divisions. The state department has agreed to supplement local school contracts to help pay for the data processing services.

Colorado—Boards of Cooperative Services

Like Wisconsin's cooperative agencies, intermediate service agencies in Colorado depend on contracts with local districts to finance their programs. But in one respect, the Colorado system is even weaker than Wisconsin's. Colorado districts must vote the new agencies into existence if they want special services.

Whenever two or more districts are interested in setting up cooperative boards, their local school boards must pass a resolution and appoint a representative to serve on the new agency's board. The cooperative board then draws up a constitution and bylaws, to be ratified by local districts.

Despite such restrictions, however, most school districts in Colorado have opted for the intermediate unit approach. Since the enabling legislation was passed in 1965, 151 of the state's 181 districts--including some of Colorado's large metropolitan areas--have voted to join cooperative programs.

The units offer services such as vocational and technical education, social guidance and family involvement, preschool education, curriculum development, bilingual education, inservice training and various administrative aids.

Pennsylvania—Intermediate Units

Pennsylvania spokesmen emphasize the fact that control of their new regional intermediate units, which began operations in July 1971, remains in local hands. But their unit program does contain one mandatory feature most states have left out of their plans--limiting a district's right to reject unit services.

While no Pennsylvania district has to accept all the services its unit decides to offer, it must prove, before refusing a particular service, that it already has an adequate program in that area which meets state standards. Otherwise, if a majority of the local districts in the region agree that the service should be offered, reluctant districts must participate. And districts cannot vote themselves out of their units altogether, as they can in some states. The state plan, shaped by the State Board of Education, places every district in one of Pennsylvania's 29 units.

"The purpose of the intermediate unit is to improve educational service in the whole state," says David M. Kurtzman, secretary of the Pennsylvania State Dept. of Education. "Consequently, the feeling is that the intermediate unit may compel some districts to get into programs which they, for a variety of reasons, don't want to participate in."

Despite the restrictions, however, a good deal of the authority for operating the unit does remain in the hands of local school districts. Each unit's budget is subject to approval by local boards of education, and its chief advisory council is made up of administrators from participating districts.

The unit board members are elected under an unusual formula designed to insure fair representation for each member district. They are chosen from members of local boards at an annual meeting, and local boards which represent more pupils get a larger share of the vote.

With no taxing authority of their own, Pennsylvania units rely on local districts for support, based on a per-pupil contribution, and on considerable assistance from the state. The state office, in fact, finances the units much as it did the old county offices, which were abolished before the unit plan took effect. State law guarantees the regional units shall not receive less state aid than their components would have under the old county system.

In its relationship to the state education department, Pennsylvania's units are just what their name implies: an "intermediate" level between state education organizations and local district boards. The units do not inherit regulatory and record-keeping functions which the county offices performed for the state department. Instead, their chief job is providing leadership and service--curriculum development, educational planning, inservice education, pupil personnel services and management assistance. This year, unit boards, staff and local administrators are analyzing existing service programs to determine which ones should be added. Whenever possible, services that have operated out of county offices will be shifted onto the shoulders of local districts, leaving intermediate units free to concentrate on more sophisticated services.

Texas—Regional Educational Service Centers

The new regional service centers in Texas stand somewhat closer to that state's educational agency than their counterparts in most other states. The Texas units do have elective governing boards, which plan programs and choose the unit director.

But each of the directors owes some responsibility to the Texas Education Agency (TEA)--particularly where statewide planning is concerned. And TEA employs a special assistant commissioner to coordinate the centers' programs.

Although local districts do help pay for service programs, Texas centers depend heavily on the state agency for financing. TEA draws on a somewhat unusual source for its share of the bill. It funnels Title III, ESEA, money into the units to cover staffing and operational expenses as well as some programs. Texas units are specially protected, however, from having to carry out regulatory functions for the state department.

Originally, the Texas program was not conceived as an intermediate unit system at all. In 1965, when the state passed the first enabling legislation, the units were envisioned as regional media centers, designed to provide films, tapes and other educational materials to areas comprising about 50,000 pupils. Only 20 of them were to service all districts in the state.

Even before the media centers could start operating, however, Texas educators decided their plan was a halfway measure. The state agency, recognizing the need for long-range planning, wanted detailed information on local demography, economics and social trends. It also needed an overall state strategy to coordinate federal funds coming into the state under ESEA. The intermediate units, TEA felt, were the logical choice to do both these jobs and some additional ones as well.

As a result, the legislature passed a new law in 1967 that authorized the media centers to venture into new areas of responsibility. Besides media services, they would be providing inservice and preservice education, curriculum assistance, special education and pupil diagnostic services. They would help coordinate Title III, ESEA, projects in their regions and assist with state planning. At the same time, local district administrators would help select which services should be offered, and each district could refuse any program it didn't want.

Because the Texas centers cover such large geographical areas, their operations involve a few unusual features. First, instead of abolishing existing county offices, as most states have, Texas authorities have kept them in operation to perform chores which are outside the scope of the new service agencies.

Second, the units' governing boards are selected by an intricate process in which each local board nominates a representative (usually the superintendent of schools). These local board representatives form a joint committee to elect a lay board for the regional agency. The indirect election process permits representatives from widely separated districts at least to talk things over before they make final board choices.

Washington—Intermediate School Districts

Besides providing educational services, intermediate units in Washington State also carry out certain supervisory, regulatory and quasi-judicial functions for state-level educational organizations. These functions were inherited from county school offices which the units replaced; legislation now pending would eliminate many of them and help establish the intermediate units in Washington more clearly as service agencies. The units rely on a combination of sources for financing, including county, state and federal funds. But just over 20% of their budgets is usually contributed by local districts.

Washington made its first move toward the intermediate unit concept in 1965, when the legislature permitted local school districts to join together to form regional units. Progress was slow, however. In the next few years only six intermediate districts were set up under this provision, and only two of those took in more than one county. So in 1969, the legislature mandated formation of intermediate districts throughout the state, and the state board of education decided on 14 of them. The new units, which vary in size from one- to six-county operations, provide inservice training, prepare learning resources, offer management assistance and handle data processing. They also coordinate development of federal programs and provide pupil personnel services.

New York—Boards of Cooperative Educational Services

New York's Boards of Cooperative Educational Services (BOCES) are an unusual hybrid intermediate system. They are simultaneously responsible both to the State Dept. of Education and to the local districts they serve. Each BOCES director performs a dual role, too. He's an employe of both the state department and his local board. The state department pays part of his salary with local districts usually supplementing that amount.

The New York arrangement shows some of the financial advantages which can come from having intermediate units tied closely to a state department. The state pays half the cost of BOCES service programs--a great help in New York, where it's unconstitutional to create new taxing authorities. At the same time, however, there is some loss of autonomy: The commissioner of education must approve each individual service program a BOCES wants to offer before state money is forthcoming.

There is virtually no legal limit on the amount of money the state can give a BOCES board, as long as the programs proposed are of sufficient quality. "If one unit wants to provide 28 services and the commissioner approves, it can get state aid for a'l of them," explaind Francis Griffin, former assistant commissioner of education for New York. "If another cooperative board wants only two programs," Griffin continues, "then that is all the support they'll receive."

New York's intermediate unit system has evolved gradually since 1948, when state legislators first permitted the existence of cooperative boards. In creating the new agencies, authorities did not abolish the state's older intermediate system of supervisory districts. Instead, the new boards were

superimposed on the territory the supervisory districts covered. District superintendents were given the new task of serving as board directors. At the same time, they kept their older supervisory responsibilities to the state department.

Since then, the state has gradually enlarged the area which each BOCES-supervisory district covers. When the BOCES program began there were 181 supervisory districts eligible to form a BOCES. Not all did so. There are now only 48. The kinds of services provided also have changed, too, from supplying itinerant teachers and health personnel to larger, more comprehensive programs. Legally, BOCES cannot furnish any services which local districts should provide for themselves, and guidelines forbid the use of BOCES services to perpetuate inefficient school districts.

Since their inception, the BOCES have been governed by lay boards of education to maintain sensitivity to local needs. These bodies, elected by boards of participating districts, choose the unit director and help plan new programs. Services are usually initiated only when local schools express a desire for them, and each district is free to decide which BOCES programs to take part in. School districts pay for a part of all services they choose to use, and they support the total cost of any BOCES activities which are not eligible for state aid. Each member district also pays a set fee for BOCES administrative costs, regardless of which services it chooses to take part in.

New Jersey—Major State Department Role

More than any other state, New Jersey uses a regional intermediate system which binds units closely to the state department of education. Traditionally, ties between county school offices and the state department have been close in New Jersey, with county superintendents appointed by state officials. And since 1969, New Jersey educators have been experimenting with a type of regional service program which, according to its spokesmen, would involve a strong "interface" between local administrators, county superintendents and state personnel.

A model for the proposed system, now operating in Glassboro, services eight counties in southern New Jersey. It is governed by a board of directors composed of representatives from many different local educational groups --district superintendents and principals, classroom teachers, boards of education, PTAs and others. County superintendents, also on the board, serve as an indirect link with the state department. The state office played a major role in setting up the unit in 1969, and state department staff meet regularly with unit leaders for planning and other tasks.

So far, setting up the regional program has required no change in New Jersey law; the unit is supported by a Title III, ESEA, grant awarded to a single participating district. However, the unit's board of directors has proposed that the Glassboro operation--and any future units--be transferred to state funding and reclassified as regional branches of the state department of education. The proposal is receiving serious consideration from state officials and, indeed, the commissioner's budget has included an item for support of the unit.

Not all unit operations would be funded by the state department, however, under the board of directors' proposal. To insure flexibility, they suggest, the unit should have another governing body--a commission with the status of a local education agency which could receive and administer grants from the federal government and private foundations. The commission would include a member of the board of education of each participating county, plus representatives from other groups now on the board of directors.

The Glassboro unit, called Educational Improvement Center, currently employs a staff of 20 who help schools with training programs, curriculum development, media services, management design and information of all sorts. An important part of its job is to perform research and development necessary to create model programs which local school districts can implement.

Besides the Educational Improvement Center, New Jersey is also experimenting with another pilot cooperative endeavor--the New Jersey Urban Schools Development Council. This cooperative has representatives of educational organizations in the state's 10 largest cities, as well as state department personnel. It concerns itself with a single problem--urban education. New Jersey educators hope their experience with the two kinds of intermediate units, one oriented toward a single need, the other toward multiple services to one geographic area, will enable them to compare the advantages of the two approaches.

Ohio and California—County School Services

Two states--Ohio and California--operate a number of major service programs through county superintendents' offices. Neither state has passed the legislation necessary to create true regional service units, although proposals to that effect have been given serious consideration in both state legislatures.

In Ohio, county school offices must, by law, serve all schools in the county system. In addition, they can also offer special services to independent districts and to systems in other counties on a contract basis. Fiscally, the county boards of education are dependent on the state legislators and the county commissioners. They are required to perform a number of administrative and supervisory functions for county schools, but in recent years, they have placed more and more emphasis on providing services.

Ohio has had an additional program of regional service since 1966. The state department of education has 30 regional offices that coordinate school bus operations for the transportation of children attending both public and nonpublic schools throughout the state.

In California, county intermediate school districts serve both as an extension of the state education office and as a service agency for local districts.

They are governed by elected lay boards of education and receive money from the state department and the county and from contracts with local school districts. County superintendents provide such things as special education,

coordination of instructional programs, libraries, instructional aids and general supervision and fiscal assistance.

In addition, California law permits some degree of cooperation among its counties. For instance, the California constitution provides that the state legislature may permit counties to join together to choose one superintendent. County offices can combine forces for certain specific tasks. A number of counties have been working together for years in such areas as consultant and audiovisual services, data processing and instructional materials centers. California law does not, however, allow for merged county boards of education and it would require a change in that state's constitution before multicounty educational service agencies could be adopted.

Illinois—Education Service Regions

Illinois took a tentative step toward regional cooperation in education in 1969, when the legislature decreed that county superintendents were to be renamed superintendents of education service regions and that, by 1973, any county with fewer than 16,000 inhabitants should merge into a larger region.

By 1977, according to the law, counties with less than 33,000 inhabitants should plan to become part of a multicounty educational service region. The 1969 law does not, however, specify what services the new agencies should offer or how they should be financed. Legislation is still pending which will determine the final shape these agencies take in Illinois, and their outline may remain dim for several years.

Several other states--including Minnesota, North Dakota, Kansas and Missouri--are presently giving serious attention to developing some kind of regional approach to educational service activities. Those states and others have a variety of workable, practicable models from which they may choose. "Even a decade ago we had to talk about intermediate units in terms of what they might theoretically accomplish," says AASA's Isenberg. "Now, if local educators want to know what a unit can do, they need only to go to a nearby state and see the things that are possible. They can decide what's best for them on the basis of other states' experiences."

Case Study: Muscatine-Scott County School System

Muscatine and Scott Counties were the first in Iowa to take advantage of that state's 1965 law permitting county systems to merge into a unit with one board, one budget and one staff. Their merger took place in July 1966, after it was approved by referendum. Iowa's master plan for regional units calls for including a third county in the Muscatine-Scott system.

Headquartered in Bettendorf, the Muscatine-Scott district is governed by a seven-member board of education made up of laymen elected at large on a non-partisan basis. The board is fiscally independent, has tax levying authority and receives state financial support for its programs. It appoints the superintendent and staff and sets their salaries. Its present service program extends into five major areas: administrative services, special education for

the handicapped, information services, instructional materials center and educational consultants.

The administrative services unit assists schools with such things as teacher certification, budget preparation, state department of public instruction reports, school reorganization, inservice meetings, school lunch evaluations and school law. The instructional materials center (in which Clinton and parts of Cedar and Louisa counties also participate) handles the booking and delivery of films, supplementary texts and other curriculum materials for schools. The center also is a depository and distribution center for Title II, ESEA, materials. It processes and distributes 75,000 books, 3,000 film prints and 1,500 transparency sets and other materials to both public and nonpublic schools in the area.

Under its educational consultants program, the Muscatine-Scott district offers assistance in language arts, science, mathematics, reading, social studies, inservice education, demonstration teaching, curriculum development, pilot studies and other areas. Information services include research, testing and data processing, and some computer-assisted instruction. The district's special education staff includes speech and hearing clinicians, psychologists, social workers, consultants for specific learning disabilities, counselors in outdoor education and vocational rehabilitation, and special teachers for the mentally retarded, hard of hearing, blind and partially sighted, and in bilingual education.

Last year, the budget for these programs totaled $2,111,740, of which $1,534,000 came from local tax money. The balance came from state and federal aid and from payments for contract services provided to schools outside the two counties. (The total tax millage for the year was 3.671 mills.) This money supported a district staff of 75 professionals and 40 nonprofessionals. A total of more than 65,000 pupils were served by one or more programs.

Case Study: Multnomah County, Ore.

The Multnomah County Intermediate Education District illustrates how intermediate units can function in large metropolitan areas. The Portland-based cooperative serves a county with about 109,000 pupils attending 144 elementary and 22 high schools. With 62 pupils in its smallest member district and 78,765 in its largest, the unit provides a variety of programs, giving direct services to those schools which need them and advisory, research and leadership services to others.

The Multnomah district is governed by an elected nonpartisan seven-member board which is responsible for the budget, the operation of offices and the selection of the unit's superintendent. The district employs about 90 persons. In 1969-70, the gross yearly payroll alone totaled $1.1 million. The unit's operations can be financed within the general fund--provided it obtains approval of two-thirds of the member districts which contain a majority of students in the intermediate area. The tax rate for operation of the intermediate district's office and general services now is 42 cents per $1,000 of assessed value. The unit also secures funds by providing services under contract, sometimes to schools outside the county boundaries.

The Multnomah district offers administrative and supplementary services, including information dissemination, school transportation, financial advice, a personnel directory, assistance with district boundary changes and administration of state and federal programs. It also carries on cooperative purchasing for member districts and operates a well equipped educational resource center and duplicating facilities. In addition, it provides evaluation services, da a processing and testing, and special education for the handicapped through consultants and itinerant teachers. Other special programs include outdoor education and various educational activities for pregnant girls, for emotionally disturbed youngsters at a county residential center and for youths in a juvenile home.

Besides these services, the Multnomah County district also engages in one function peculiar to Oregon: It administers a county equalization tax, required by Oregon law, to help spread the tax burden more evenly among local districts in its area. The unit takes approximately 50% of the operating levy of each local district and redistributes it countywide according to the number of children in each local district. In 1969-70, the amount redistributed came to some $21 million. In addition, the district provides some services for state education organizations which deal largely with the handling of funds. These functions also include some processing of teacher certification, health certificates and bus driver licensing.

Case Study: Tompkins-Seneca-Tioga BOCES

When the New York State Legislature first authorized Boards of Cooperative Educational Services in 1948, it meant for the new organizations to help put educational services in rural areas on a par with those in metropolitan areas. By 1970, the Tompkins-Seneca-Tioga BOCES in upstate New York had fulfilled much of that hope. Organized in 1949, that BOCES now serves about 20,000 pupils in all of Tompkins county, parts of Seneca and Tioga counties, and the city of Ithaca. From an operation concerned chiefly with handling itinerant teachers, it has grown into a large-scale organization which provides many different types of services.

Much of this growth took place in the last decade. In 1960, the Tompkins-Seneca-Tioga BOCES consisted of a district superintendent, a part-time secretary and 16 itinerant teachers. By 1970, it had 126 full-time employes and 122 part-time employes, most of the latter teaching adult education. Its budget also grew rapidly during those years--from $123,312 in 1960 to over $1.9 million ten years later. Present funding for the BOCES comes from local district payments, substantial state aid and federal funds for some special programs.

Currently, the BOCES provides six specific programs to member school districts:

- Itinerant teachers in art, music, physical education, speech correction, driver education, and dental hygienists and school psychologists.
- Computerized data processing of records, accounting data, high school scheduling, bus routing, etc.

- An educational communications center with over 1,400 16mm films, other audiovisual aids and various instructional resources.

- Vocational education (students attend the vocational center half a day, then return via buses to regular schools for academic subjects).

- Continuing education--an area which attracted about 4,600 adults last year.

In addition, the BOCES offers such services as a cultural program, activities for the gifted, inservice education, help with developing federal projects, teacher certification and recruitment, and placement of personnel.

Just recently, the BOCES has been able to adequately house its programs. Under permissive legislation which allows BOCES to construct facilities through the New York State Dormitory Authority, the Tompkins-Seneca-Tioga unit built a $3.5 million center with three major buildings for vocational education, one for education of the handicapped, and one for administration and special services. Besides making more room for programs, BOCES spokesmen say the new facilities will be more economical than past rental arrangements. Money which formerly went into rent is being used to pay off a 30-year mortgage held by the dormitory authority under a construction-lease-purchase agreement.

Government of the BOCES rests in the hands of a nine-member board of education. New members are chosen by local district board members, who attend a general meeting each spring for that purpose. BOCES board members need not be members of local boards, however. District administrators also play an important part in planning BOCES programs. They form a "cabinet" which meets monthly with the director to develop ideas and recommend projects.

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Differentiated Staffing: A Review of Current Policies and Programs. Tells how some schools are using this new way of deploying and paying teachers and whether it works. =111-12754. 1970. 48 pp. $4.

Drug Crisis: Schools Fight Back with Innovative Programs. Reports on drug abuse education programs around the country: facts and figures; what works and what doesn't; involving teachers and parents. Explains new federal drug abuse acts and includes a section on hyperactivity and amphetamines and directories of drugs and drug terms. =111-12798. 1971. 64 pp. $4.

Environment and the Schools: Pioneer Programs Set the Pace for States and Districts. What's happening in school districts, state legislatures, higher education and nationwide programs concerning environmental education. Includes guidelines, sample programs, reading and film lists. =111-12782. 1971. 50 pp. $4.

Federal Aid: New Directions for Education in 1970-71. Reports appropriations for 1970-71 and the 1970 amendments. Explains new amendments affecting federal funding. Includes a guide to all U.S. Office of Education programs for 1971. =111-12776. 48 pp. $4.

Individualization in Schools: The Challenge and the Options. An examination of individualization programs, including their impact, goals, costs and results; whether students learn more; what the critics say. Detailed descriptions of eight major systems, including IPI, PLAN, IGE, IMS and PLATO. =111-12792. 1971. 64 pp. $4.

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Address communications and make checks payable to the National School Public Relations Association, 1201 16th Street NW, Washington, D.C. 20036.

STATE OF ALASKA
THE LEGISLATURE

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Mary Van Nimwegen

H. H&SS 2-16-90

HB

283

STATE OF ALASKA
1990 LEGISLATIVE SESSION

Bill Version: HB 283
Publish Date:

FISCAL NOTE

REQUEST:

Revision Date:
Title: An Act relating to indoor air quality standards for certain
Sponsor: M. Davis
Requestor:

Agency Affected: Department of Administration
BRU: Leasing and Facilities
Components: Leases, Administration

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	51.3*	26.1*	0	0	26.1*	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	710.2*	99.9*	27.7*	28.8*	225.5*	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	761.5*	126.0*	27.7*	28.8*	251.6*	0
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND	761.3*	126.0*	27.7*	28.8*	251.6*	0
FEDERAL FUNDS	0	0	0	0	0	0
OTHER	0	0	0	0	0	0
TOTAL	761.3	126.0	27.7	28.8	251.6	0

POSITIONS:

FULL-TIME	1	0	0	0	0	0
PART-TIME	0	.5	0	0	.5	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

*Based on a scenario in which the new standard would require 50% of expiring leases to be rebid and have increased costs of 10%. There would be Ø fiscal impact for FY 90.
(See attached analysis.)

Prepared by: Robert J. Link
Phone: 465-2250
Division: General Services and Supply
Date: 2/21/90

Approved by Commissioner: Frank S. Baxter
Date: 2/22/90
Agency: Department of Administration

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

15/11K1/021609-0/1&2

Rev: 11/89

CONTINUATION OF FISCAL NOTE ANALYSIS
For HB 283

Although the Department supports setting standards for air quality that would ensure a uniform, acceptable level for clean indoor air in state offices, it must be noted that there would be a significant fiscal impact on the cost of leased space.

The extent of the impact is not known because the proposed standard has not been established. Increased costs are contingent not only upon the variance between any new standard and the current codes governing heating, ventilation, and air conditioning (HVAC) specifications, but also are dependent upon the inclusion of a method for waiver. In areas where there is absolutely no possibility of obtaining compliance, or when compliance is determined to be too costly, an alternative, other than closure of state offices, must be provided in the Bill.

Currently, the state has 115 leases for office space in excess of the 2,000 square foot threshold in HB 283. These 115 leases contain approximately 1,600,000 square feet at a combined monthly cost of approximately $2,050,000.

The renewal or expiration schedule for the next six.(6) fiscal years is:

* FY 91: 38 leases = 551,873 square feet @ $544.6 per month.

* FY 92: 10 leases = 125,188 square feet @ $189.6 per month.

* FY 93: 4 leases = 28,833 square feet @ $43.0 per month.

* FY 94: 3 leases = 26,183 square feet @ $31.9 per month.

* FY 95: 6 leases = 216,064 square feet @ $491.7 per month.

* FY 96: CURRENTLY NO ESTABLISHED LEASES ARE SCHEDULED FOR RENEWAL OR EXPIRATION IN FY 96. BECAUSE MOST LEASES RUN FROM 1 TO 3 YEARS PLUS VARIOUS RENEWAL OPTIONS, ONLY LEASES COMMENCING DURING OR AFTER FY 90 WILL HAVE AN IMPACT IN FY 96.

****

ADDITIONAL PERSONNEL:

The number of leases that would have to be rebid in order to comply with revised air quality standards in FY 91 and FY 92 will place a severe strain on an already overextended purchasing staff. If the standards are substantially changed, additional staff will be required. Based on a scenario of rebidding 50% of expiring leases which have renewal options, one Purchasing Agent III, Range 18, step A @ $51,300 per annum will be needed to develop bids and manage moves for an estimated 14 leases for approximately $250,000 s.f. during FY 91. A half-time position would be needed in FY 92 and FY 95.

****

INCREASED OPERATING COSTS:

The only experience we have had with setting more stringent HVAC requirements is in the case of Lease #1445, the Department of Labor Building, in Anchorage. The more stringent requirements were voluntarily complied with by the lessor, who has indicated an increased operating cost of approximately 10%. Increases cover only the additional cost of electricity, gas and filters required by the higher standard of operation. This does not reflect any cost for actual changes to a system, just the increased operation of a current system.

Based on the Department of Labor project, a cost increase of 10% should be anticipated on all affected or noncomplying office spaces. This estimate may be too low for locations other than Anchorage where natural gas provides a low cost energy source.

Using a 10% cost factor and applying it to scenarios of 25%, 50% and 75% of the leases that require replacement or renewal during each fiscal year, the following additional costs can be anticipated:

FISCAL YEAR	LEASES IMPACTED @ 25%	LEASES IMPACTED @ 50%	LEASES IMPACTED @ 75%
* FY 91:	$163.4	$326.8	$490.2
* FY 92:	$ 37.6	$ 75.1	$112.7
* FY 93:	$ 8.7	$ 17.3	$ 26.0
* FY 94:	$ 7.9	$ 15.7	$ 23.6
* FY 95:	$ 64.8	$129.6	$194.5
* FY 96:	* $ N/A	$ N/A	$ N/A
TOTAL =	$282.4	$564.5	$846.7

*No existing leases are scheduled for renewal or expiration in FY 96.

****

MOVING EXPENSES

Moving expenses may be expected for leases that must be vacated due to new standards. Basic moving costs are estimated to be $1.50 per square foot.

For example, in FY 91, 9 leases containing 40,683 square feet of office space are expiring and must be rebid. An additional 27 leases containing 511,190 square feet will require renewal. If just 25 percent of the renewable space must be replaced due to new air quality standards, the additional cost for moving alone would be approximately $191.7.

The renewal schedule for the next six (6) fiscal years and the cost to move 25, 50 or 75 percent of the renewable leases is:

FISCAL YEAR	NUMBER OF LEASES	RENEWABLE SQUARE FEET	COST TO MOVE 25%	COST TO MOVE 50%	COST TO MOVE 75%
91	27	511,190	$191.7	$383.4	$575.1
92	7	74,335	$ 12.4	$ 24.8	$ 37.2
93	2	13,883	$ 5.2	$ 10.4	$ 15.6
94	1	8,708	$ 6.6	$ 13.1	$ 19.7
95	5	63,926	$ 48.0	$ 95.9	$143.9

****

TOTAL ESTIMATED OPERATING AND MOVING COSTS:

Based on the forgoing, using 50 percent as a median, the increased operating, moving and personnel costs that would be associated with major changes to air quality standards are estimated to be:

FISCAL YEAR	OPERATING COSTS		MOVING COSTS		PERSONAL SERVICES		ANNUAL ESTIMATE
FY 91	$ 326.8	+	$ 383.4	+	$ 51.3	=	$ 761.5
FY 92	$ 75.1	+	$ 24.8	+	$ 26.1	=	$ 126.0
FY 93	$ 17.3	+	$ 10.4	+	$ 0.0	=	$ 27.7
FY 94	$ 15.7	+	$ 13.1	+	$ 0.0	=	$ 28.8
FY 95	$ 129.6	+	$ 95.9	+	$ 26.1	=	$ 251.6
FY 96	$ 0.0	+	$ 0.0	+	$ 0.0	=	$ 0.0
TOTALS =	$ 564.5		$ 527.6		$ 103.5		$1195.6

****

CONTINUATION OF FISCAL NOTE ANALYSIS
For HB 283

Since there is no way of knowing how many leases will need to be rebid, we have used 50 percent of the renewing leases as a factor in reaching the assumptions presented with the Fiscal Note.

Depending on the extent of the changes to current standards and the need for major changes to the HVAC of existing buildings, additional lease costs will be encountered.

P.O. Box 110601
Anchorage, Alaska 99511

April 17, 1989

Representative Johnny Ellis
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

REC'D APR 20 1989

Dear Representative Ellis:

I am writing to you about an issue that may affect all of us - indoor air pollution. We take for granted the air we breathe, especially the fact that the air we breathe will not harm us. An increasing number of people are realizing this is not true. We Alaskans spend most of our time indoors, we have a greater chance than people in southern states that the air we breathe indoors may affect us.

I am a state worker and I know the indoor air quality at my work place affects my health. New Hampshire and Maine recognized indoor air quality problems and passed laws in 1988 to set minimum ventilation standards in their state office buildings. HB283 directs The Department of Labor to establish minimum ventilation rates for state office buildings. I encourage the Health, Education and Social Services Committee to hold hearings on this bill before the end of the session.

Enclosed is an EPA information sheet describing some facts about indoor air pollution. I look forward to working with you to provide a safer work environment and thereby lower state health care costs.

Sincerely,

Bill Ashton

cc: Carl Hild, Alaska Health Project w/o enclosures
Deborah Williams, American Lung Association of Alaska, w/o enclosures
Rich Seiffert, Alaska Cooperative Extension Service, w/o enclosures
Penny Palmquist, ASEA w/o enclosures

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Chapter 68

SB 269-FN

STATE OF NEW HAMPSHIRE

In the year of Our Lord one thousand
nine hundred and eighty-eight

AN ACT

relative to indoor air quality in certain state buildings.

Be it Enacted by the Senate and House of Representatives in General Court convened:

68:1 New Chapter; State Buildings. Amend RSA by inserting after chapter 10 the following new chapter:

CHAPTER 10-A

CLEAN INDOOR AIR IN STATE BUILDINGS

10-A:1 Definitions. In this chapter "clean air" means the standards set by the division of public health services, department of health and human services, in consultation with department of labor.

10-A:2 Clean Air Required.

I. The director of plant and property management, department of administrative services, or any other state agency authorized to build, acquire, or lease office space, shall require that, after January 1, 1989, any new state building, any existing building acquired by the state, any initial lease of a state building by the state, or any building bequeathed to the state shall meet clean air standards before it may be used for any state purposes, other than storage.

II. The division of public health services, department of health and human services, shall be responsible for certification in writing to the director of plant and property management or other appropriate state agency head that the buildings listed under paragraph I meet the clean air standards.

III. Any person entering into an initial lease for any building listed under paragraph I which does not meet the clean air standards may terminate such lease.

10-A:3 Rulemaking.

I. The director of plant and property management shall adopt rules, under RSA 541-A, relative to:

(a) Content and format of any forms necessary under RSA 10-A:2, I.

(b) Manner of acquiring certification from the division of public health services.

(c) Any other matter necessary to the administration of this chapter.

II. The director, division of public health services, after consultation with the commissioner of labor, shall adopt rules, under RSA 541-A, relative to what constitutes the clean air standard.

III. The director, division of public health services shall adopt rules, under RSA 541-A, relative to:

(a) Content and format of any forms necessary under RSA 10-A:2, II.

(b) Certification procedures.

(c) Any other matter necessary to the administration of this chapter.

16-A:4 Exceptions.

I. This chapter shall not apply to the university system of New Hampshire.

II. The governor and council, upon recommendation by the director of plant and property management or other state agency authorized to build, acquire, or lease office space, may suspend the enforcement of all or part of this chapter or any rule adopted under it upon finding that an emergency or hardship exists which makes compliance with the provisions of this act unfeasible.

68: 2 Effective Date. This act shall take effect January 1, 1989.

Approved April 11, 1988
Effective January 1, 1989

NH Rules from RSA 10-B authority

DRAFT

Chapter 1800 Occupational Health Rules
Statutory Authority: RSA 10-B

Part He-P 1804 CLEAN AIR IN STATE BUILDINGS

He-P 1804.01 "Initial Lease" means any lease of a bulding executed on behalf of a state agency when either no prior lease of that building by the state agency existed or the previous lease of that building by that state agency has expired.

He-P 1804.02 Testing Required - It shall be the responsibility of the builder, seller, lessor, or donor (or the donor's executor) of a building, or portions of buildings subject to these rules, which is to be built for, leased, rented, sold or bequeathed to the state, to cause such building or portions thereof to be tested in order to demonstrate compliance with the clean air standards set forth under He-P 1805. Samples shall be collected by a Certified Industrial Hygienist or an individual who is under the supervision of a Certified Industrial Hygienist. Tests shall be conducted by laboratories accredited by the American Industrial Hygiene Association.

He-P 1804.03 Certification of Clean Air Standards - The builder, seller, lessor, or donor (or donor's executor) shall certify the quality of the indoor air present in buildings, or portions of buildings, subject to these rules. Certification shall be deemed complete upon written receipt by the Division of Public Health Services of the following information:

(a) Mailing address for the building
(b) City or town where the building is located
(c) Identification of those sections of the building subject to these rules
(d) Names, addresses, and telephone numbers of persons conducting sampling or analysis pursuant to He-P 1804.01.
(e) Copies of test results used to determine compliance with He-P 1805
(f) One of the following two statements:

(1) "I hereby certify that sampling and analyses conducted pursuant to He-P 1804.02 was performed in accordance with best professional practice and accurately represents usual conditions in the areas tested. I further certify that the indoor air quality of this building, or those portions of said building subject to these rules, is in compliance with He-P 1805."; or

(2) "I hereby certify that sampling and analysis conducted pursuant to He-P 1804.02 was performed in accordance with best professional practive and accurately represents usual conditions in the areas tested. I further certify that the indoor air quality of this building, or of those portions of said building subject to these rules, is not in compliance with He-P 1805.".

(g) Notarized signature of the builder, seller, lessor or donor (or donor's executor).

(h) Documentation of the qualifications of person(s) conducting either sampling or analysis necessary to demonstrate compliance with He-P 1805. Such documentation shall include a work performance history and copies of any relevant special licenses or accreditations held by persons so employed.

He-P 1804.04 Certification by the Division of Public Health Services - If the information submitted pursuant to He-P 1804.02 demonstrates compliance with all standards established in He-P 1805 then the Division shall issue a statement of certification in accordance with RSA 10-B:2 II. The following information shall be included in the statement of certification:

(a) Mailing address of the building.
(b) Actual location of the building.
(c) Identification of those sections of the building subject to these rules.
(d) The following statement:

(1) "I hereby certify, based upon information submitted pursuant to He-P 1804.02, that the indoor air quality of the building described above complies with He-P 1804.05.".

(e) Signature of the Director, Division of Public Health Services.

He-P 1805 INDOOR AIR STANDARDS

He-P 1805.01 Ventilation - Ventilation standards shall be in accordance with the American Society of Heating, Refrigerating and Air Conditioning Engineers., Inc. standards established in the edition published in 1981 entitled "Ventilation for Acceptable Indoor Air Quality."

He-P 1805.02 Noise - Noise standards shall be the preferred noise criteria established by the American Institute of Architects Architectural Graphic Standards Seventh Edition published in 1981 by John Wiley and Son, Publisher.

He-P 1805.03 Radon - The maximum allowable concentration of radon shall be 4.0 picocuries of radon per liter of air.

He-P 1805.04 Carbon Dioxide - The maximum allowable concentration of carbon dioxide shall be 800 parts of carbon dioxide per million parts of air.

He-P 1805.05 Asbestos - The maximum allowable concentration of asbestos shall be 0.1 fibers of asbestos per cubic centimeter of air.

He-P 1805.06 - Formaldehyde - The maximum allowable concentration of formaldehyde shall be 0.1 part of formaldehyde per million parts of air.

JCP/dkl/1407s

STANDARDS PRESENTATION

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Adopt new Section 5142 as follows:

5142. ~~Control by Ventilation.~~ Mechanically Driven Heating, Ventilating and Air Conditioning (HVAC) Systems to Provide Minimum Building Ventilation.

(a) Operation:

(1) The HVAC system shall be maintained and operated to provide at least the quantity of outdoor air required by the State Building Standards Code, Title 24, Part 2, California Administrative Code, in effect at the time the building permit was issued.

(2) The HVAC system shall be operated continuously during working hours except:

(A) during scheduled maintenance and emergency repairs;

(B) during periods not exceeding a total of 90 hours per calendar year when a serving electric utility by contractual arrangement requests its customers to decrease electrical power demand; or

(C) during periods for which the employer can demonstrate that the quantity of outdoor air supplied by nonmechanical means meets the outdoor air supply rate required by (a)(1) of this Section. The employer must have available a record of calculations and/or measurements substantiating that the required outdoor air supply rate is satisfied by infiltration and/or by a nonmechanically driven outdoor air supply system.

(b) Inspection and Maintenance:

(1) The HVAC system shall be inspected at least annually, and problems found during these inspections shall be corrected within a reasonable time.

(2) Inspections and maintenance of the HVAC system shall be documented in writing. The employer shall record the name of the individual(s) inspecting and/or maintaining the system, the date of the inspection and/or maintenance, and the specific findings and actions taken. The employer shall ensure that such records are retained for at least five years.

(3) The employer shall make all records required by this Section available for examination and copying, within 48 hours of a request, to any authorized representative of the Division, to any employee of the employer affected by this Section, and to any designated representative of said employee of the employer affected by this Section.

Note: Authority cited: Section 142.3, Labor Code.
Reference cited: Section 142.3, Labor Code.

Standard Proposed in New Jersey to Cover Public Employees

PROPOSED STANDARD

Ventilation and Air Quality for Public Buildings and Places of Employment for Public Employees*

Background:

Indoor air quality has been responsible for a significant number of complaints from CWA members, including headache, drowsiness, nausea, eye and respiratory tract irritation, dizziness, skin itching or rash, difficulty in breathing and sinus congestion.

Offices and other indoor environments have always been subject to atmospheric contamination. Unfortunately, such problems are on the increase and associated with the measures being taken for energy conservation, and with the introduction of pollution creating new technology and building products. Building tightening, early shutdown and late startup of the ventilation system, reducing or eliminating outdoor air, greater air recirculation, lower air velocities, eliminating humidification or dehumidification systems, and vapor, dust and microbe accumulation are being permitted without consideration being given to possible adverse health effects.

The causes of indoor air problems are well-known and largely preventable. But because no adequate standard has been adopted and enforced, very little is being accomplished to rectify these problems.

Overview of the Standard:

The proposed standard calls for acceptable indoor air quality to be achieved by providing ventilation air of best available quality and specified quantity** to occupied building spaces. The standard specifies how much outdoor air must be supplied per person in smoking and nonsmoking areas. It further requires that outdoor air must be drawn from an area relatively free from pollution sources. It is felt that measurements can be readily taken of the quantities of air supplied; physical inspection and observation can reveal if the intake is properly sited. Thus the standard is enforceable.

The alternative performance standard method of accepting air quality in occupied building spaces as long as certain identified contaminants are kept below set limits has been rejected. It relies almost totally on difficult, costly and imprecise air monitoring and set limits which may be too permissive or nonexistent for some contaminants.

*Including laboratories and hospitals.

**The outdoor air requirements for ventilation have been taken from ASHRAE Standard 62-1981, "Ventilation for Acceptable Indoor Air Quality".

We believe our approach is reasonable. It is based on the following beliefs:

1. Outdoor air quality is almost always better than air quality in a poorly-ventilated indoor space.

2. Employees are entitled to breathe indoor air of no worse quality than outdoor air.

3. Where serious outdoor air quality problems exist which impact indoor air quality, the work site should be relocated until the pollution is controlled at the source. Cleaning outdoor air before bringing it indoors is technologically impractical in most cases.

4. Various air contaminants will build up in inadequately ventilated occupied spaces. These may include carbon monoxide, formaldehyde, ozone, oxides of nitrogen, fibrous building materials, microbes.

5. The health effects of exposure indoors to low levels of various air contaminants is not well-known and ought to be minimized.

6. The phenomena of hypersensitivity pneumonitis (HP) will also be controlled by the measures required in the standard. NIOSH found in investigations of five large office buildings where HP was reported that several buildings were characterized by a history of repeated flooding and all contained mechanical systems with pools of stagnant water and microbial slimes.

7. NIOSH, in more than 200 indoor air quality investigations in a variety of office buildings, found five major problems—contamination generated inside the office space (21%), contamination from sources outside the office space (10%), contamination from building materials and products (3.5%), biological contamination (3.5%), and tight building related problems in which ventilation was inadequate (52%).

It can therefore be anticipated that 50% of buildings will not be in compliance with the ventilation requirements in the table of this standard, showing the need for the standard. Since the other 50% of buildings can be expected to already be in compliance, the reasonableness of meeting the standard is also shown.

8. Contaminants released at roof level may spread over the entire roof and enter nearby ventilation intakes. Contaminants carried by the wind over the side may flow back up onto the roof. Thus, design of exhaust vents is an important issue in the standard.

4. To assure discharge away from the building, effluents must be exhausted above the roof contour height or the roof eddy zone. If this is not possible, high velocity, vertical discharge above the roof at the highest practical level is required. Architectural roof fences intended to improve appearance shall not be permitted to interfere with discharge.

Stacks must be designed and located for satisfactory operation during all wind conditions. In no case should discharge be at roof level or at velocity below average wind velocity. The stacks should be located on the highest roof of a building whenever possible. Stack caps that deflect the effluent downward or drastically reduce velocity should not be used.

5. If possible the building should be operated so that inside pressure is slightly positive with respect to the atmosphere to prevent pollutants entering through idle exhaust ducts and miscellaneous stacks and vents.

6. Distribution of air shall be such that no occupied area receives less than 75% of the amounts specified in the table.

7. Distribution of air shall be such that no occupied area has drafts.

8. At a minimum, ventilation systems shall operate during all hours when buildings are occupied. Early startup may be required after periods of shutdown for holidays and weekends. When required for energy conservation purposes, early shutdown shall not exceed 30 minutes.

9. Relative humidity in occupied spaces shall be in the 30-60% range. HVAC systems with water spray units should be equipped with proper demisters and dehumidifiers, and cooling coils should be run at a temperature low enough to dehumidify ventilation air. In buildings where relative humidity is excessive, outdoor air may initially have to be passed over refrigeration coils for dehumidification prior to passage into AHUs.

10. Humidifiers in HVAC systems should preferentially use steam as a water source. Humidifiers utilizing recirculated water are not recommended as these may become rapidly contaminated with organic dusts and microorganisms.

11. Filters used in AHUs shall have a moderate (30 to 70%) efficiency as measured by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) atmospheric dust spot test, and in general should be the extended surface type. To prolong the life of these filters and to improve cost effectiveness, prefilters (such as the roll type) should be used to filter the air prior to passage over the higher efficiency filters. Filters of this efficiency will remove spores as well as organic dusts that support microbial growth.

C. Preventive Maintenance Programs Affecting Ventilation and Air Quality

1. All external and internal water leaks shall be promptly and permanently repaired.

2. Floors, walls, ceilings and work surfaces shall be kept clean, dry and dust-free.

3. Stagnant water shall not be allowed to accumulate under cooling deck coils of AHUs. Proper inclination and continuous drainage of drain pans is required. AHU components should be routinely inspected at regular intervals. If contamination with microbial slime is found, it shall be removed. Steam lancing can be used to remove slime providing that this treatment does not damage heat exchange surfaces. Chlorine generating slimicides and proprietary biocides may be used to remove slime from AHUs provided that these chemicals are removed before AHUs are reactivated.

4. Filters used in AHUs shall be replaced at regular intervals.

5. Humidifiers which use recirculated water shall be subject to a fastidious preventive maintenance program involving regular inspection, cleaning, and disinfection.

D. Remedial Action in Buildings where HP or Similar Diseases are Occurring

1. Where carpet, upholstery, ceiling tiles and other porous furnishings are grossly contaminated with microbes, it is better to discard these items rather than attempt disinfection.

2. During building cleanup, microbially-laden materials should be carefully removed so as to minimize aerosolization of respirable antigenic materials. Structural and other building surfaces should be vacuumed with an instrument incorporating a high efficiency particulate air filter and then disinfected with bleach or proprietary biocide.

E. Employee Access to Information

1. The following documents must be prepared and available for inspection and copying at each work site by employees and their representatives and State enforcement agencies.

a. Written standard operating procedures for the ventilation system including the method used for regulating percentage of outdoor air and what percentage is used.

b. Written standard maintenance procedures for the ventilation system.

c. A schematic diagram of the building exterior and roof showing all intakes and exhausts and specifying the nature of effluents, velocity in fpm of exhausts, volumes in cfm of intakes and exhausts and stack heights.

d. A diagram showing wind directions and percentage of the time wind blows in each direction at effluent exhaust points.

e. A schematic diagram showing location, type and sequence of all central ventilation equipment including fans, ductwork, air cleaners and filters, energy recovery unit, humidification and dehumidification systems, plenums, air-conditioning and heating equipment, etc.

f. A schematic diagram showing layout of ductwork and intake vents and windows, and exhaust vents for each floor specifying volumes in cfm for vents and windows. Layouts shall also show each desk or other work station, walls, doors and partitions. Smoking and non-smoking areas shall be indicated and the location of equipment covered in 3E.

2. The following information shall be posted at each work site:

a. The name and telephone number of person(s) responsible for compliance with these standards.

b. The name and telephone number of person(s) to whom problems may be reported.

c. Any malfunctions, breakdowns, repairs or changes in ventilation equipment or procedures which are occurring and an estimation of when standard procedures are expected to resume.

d. The layouts described in Section 1f for each floor shall be posted on that floor.

e. The equipment listed in 1e shall be labeled clearly on its exterior in a prominent place.

3. An employee representative shall be assured the opportunity to observe any inspection and/or testing of the ventilation system and receive a copy of results.

F. Building Materials and Furnishings

1. The following shall not be used indoors unless it has been determined in advance that their use will not create measurable levels of air contaminants for more than one week after installation or first use.

a. Particle board, plywood, floor coverings, carpet backings, textiles and other materials containing formaldehyde resins.

b. Urea-formaldehyde foam insulation.

c. Adhesives, paints and sealants containing solvents, isocyanates and other organic chemicals.

d. Flooring, insulation, coating, textiles or other materials containing asbestos.

2. During installation or application of the materials listed in 1a-c, the building spaces involved shall not be occupied.

3. After installation or application of the materials listed in 1a-c, the building spaces involved shall be overheated for a minimum of 12 hours followed by ventilation for a minimum of 12 hours to bake out the organic contaminants, before the spaces are reoccupied.

G. Construction, Renovations, Roofing

1. When dusty construction or renovations occur, dust shall be contained by sealing the construction and renovation work areas with plastic sheeting and maintaining them under negative pressure using high volume dust collectors vented outside the building.

2. When roofing using heated or volatile sealants occurs, intakes in the roofing work area shall be baffled, extended through temporary ductwork or otherwise rearranged so that contaminated air is not drawn in.

3. When the procedures in 1) and 2) are ineffective or not used, affected building spaces shall not be occupied during construction, renovation or roofing work.

Table: Outdoor Air* Requirements for Ventilation

	Smoking		Nonsmoking
		cfm/person	
Offices			
Office Space	20		5
Meeting and Waiting Space	35		7
Food and Beverage Services			
Kitchens	—		10
Dining Rooms, Cafeterias, Fast Food Facilities	35		7
		cfm/ft.^{2}floor	
Parking Garages, Auto Repair Shops	15		15
Public Spaces			
Corridors and Utility Rooms	0.02		0.02
Public Restrooms	75	cfm/stall or urinal	

*Outdoor air is taken from the external atmosphere and, therefore, not previously circulated through the system. If proper air cleaners and adequate temperature controls are provided, part of this air may be recirculated but the outdoor air portion must never be less than 5 cfm/person or 30% of the total required, whichever is higher

United States Environmental Protection Agency | Office of Research and Development Washington DC 20460 | Office of Air and Radiation Washington DC 20460

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EPA

Indoor Air Facts No. 4

SICK BUILDINGS

INTRODUCTION

A new building term--sick building--has been coined in recent years. A building is characterized as "sick" when its occupants complain of health and comfort problems that can be related to working or being in the building. Problems associated with sick buildings are "sick building syndrome" (SBS) and "building related illness" (BRI). (These terms generally apply to problems related to indoor air pollution; they are not used to characterize buildings where complaints stem solely from inadequate temperature or humidity control.)

A World Health Organization Committee estimates that up to 30 percent of new and remodeled buildings may have such problems. In fact, almost every building may at some time experience indoor air quality (IAQ) problems. Frequently, the problems result from the building being used, operated, or maintained in ways unforeseen by those who originally designed it, or from poor judgment in the building design itself.

SBS Symptoms -- A building is said to manifest SBS when:

- A substantial percentage of building occupants complain of symptoms associated with acute discomfort--headache; eye, nose, or throat irritation; dry cough; dry or itchy skin; dizziness and nausea; difficulty in concentrating; fatigue; and sensitivity to odors.
- The cause of the symptoms is not known.
- Most of the complainants report relief upon leaving the building.

BRI Symptoms -- When occupant exposure to indoor contaminants results in a clinically defined illness, disease or infirmity, the building is said to manifest building-related illness, which is characterized by:
- Complaints of symptoms such as cough; chest tightness; fever; chills, and muscle aches which can be associated with illness.
- The cause or causes of the symptoms are believed to be exposure to indoor pollutants.
- Complainants may require prolonged recovery times after leaving the building.

It is important to note that it is normal for some percentage of building occupants to experience one or more of such symptoms, and that occupant complaints may also result from an illness contracted outside the building, acute sensitivity (allergies, perhaps) of certain individuals, job-related stress or dissatisfaction, or other psychosocial factors. Nevertheless, studies show that such symptoms may be caused or exacerbated by indoor air contamination.

CAUSES OF SICK BUILDINGS

Indoor air problems that have been cited as causes of or contributing factors to sick buildings include:

- Inadequate ventilation.
- Pollutants emitted inside the building.
- Contamination from outside sources.
- Biological contamination.

These causes usually act in combination, and often supplement other occupant complaints such as inadequate temperature, humidity, or lighting. However, even after a building investigation, specific causes of SBS problems may remain undetermined.

Inadequate Ventilation -- Prior to the 1973 oil embargo, most building heating,

ventilating, and air conditioning (HVAC) systems were designed and operated to provide as much as 15 cubic-feet-per-minute (cfm) of outside air for each building occupant. To save energy, conservation measures have been implemented which reduce the amount of outdoor air provided for ventilation to only 5 cfm per occupant. Also, many HVAC systems do not effectively distribute the ventilation air to people in the building. The result is inadequate ventilation which allows pollution levels from existing sources to increase. This is thought to be a major contributing factor to SBS.

Indoor Pollutants -- Some indoor pollutants come from sources inside the building. For example, adhesives, carpeting, vinyl or rubber molding, manufactured wood products, copying machines, pesticides, and cleaning agents may emit volatile organic compounds (VOCs), including formaldehyde. Research shows that some VOC's can cause acute and chronic health effects at high concentrations, and some are known carcinogens. Tobacco smoke is also a source of indoor air pollution, contributing to harmful levels of VOCs and respirable particulate matter.

Contamination from Outside Sources -- The indoor air can also be contaminated from sources outside the building. This occurs primarily when pollutants from motor vehicle exhausts, plumbing vents, and building exhausts (such as toilets and kitchens) enter the building through improperly located outside air intakes, windows, and other openings. In addition, combustion products such as carbon monoxide and nitrogen dioxide can enter a building from an attached or underground garage. These pollutants can cause both SBS and BRI symptoms.

Biological Contamination -- Another major cause of sick buildings is biological contamination by bacteria, molds and their spores, pollen, viruses, and other biological material. Such contamination is often associated with HVAC systems. For example, biological contamination may breed in stagnant water allowed to accumulate in humidifiers and cooling coil condensate pans, or where water has collected on ceiling tiles, carpeting, insulation, and internally lined duct work. Physical symptoms related to biological contamination include cough, chest tightness, fever, chills, muscle aches, and general allergic type responses such as mucous membrane irritation and upper respiratory congestion. One such indoor bacterium, Legionella, has caused Legionnaire's Disease and other illnesses.

WHAT ABOUT RADON AND ASBESTOS?

Because SBS and BRI problems are associated with acute (short-term) symptoms, indoor pollutants such as radon and asbestos, which are of concern because of their long-term health effects, are not considered to be among the causes of sick buildings. However, this does not mean that they do not pose an important health risk. Radon and asbestos should be included in any comprehensive effort to evaluate a building's IAQ, radon particularly in low-rise buildings and asbestos in older buildings.

ASSESSING THE PROBLEM--THE FIRST STEPS

The first step for individuals with symptoms similar to SBS or BRI is to be examined by a physician to determine the cause of the symptoms and to establish whether the symptoms may be related to the work environment. Consultation with a Board-certified specialist in occupational medicine may also be advisable.

If it is determined that the working environment may be the cause of the symptoms, supervisors, building maintenance personnel, and union representatives will need to work together to identify and resolve the problem. Initially, this effort should include checking to make sure adequate ventilation is being provided,

and, if practical, either modifying or removing suspected pollutant sources. If, for example, a biological contaminant is suspected, actions to be considered might include replacing water-stained ceiling tile and carpeting; removing room humidifiers; and cleaning and properly maintaining air handling equipment. Relocating your work space elsewhere in the building might also be discussed.

In many instances such coordinated effort by employees, management, building maintenance personnel, and others, will resolve an indoor air quality problem. However, in other instances, it may be necessary for an IAQ consultant to study the building.

WHAT IAQ CONSULTANTS LOOK AT

Because there may be many different sources of symptoms and complaints in a sick building, IAQ consultants will try to use investigatory procedures that are practical, economically feasible, and sensitive enough to detect the multiple sources of potential problems. Their procedures can be applied to investigating a sick building, a "non-complaint" building as a preventive measure, or to the design of a new or remodeled building. The process usually involves three phases: a *consultation phase, and qualitative and quantitative diagnostics phases*.
The purpose of the **consultation phase** is to identify the nature of existing or potential IAQ problems. Investigators obtain preliminary information on problems and complaints in confidential discussions and perform a walk-through of the building. At this time, they may formulate preliminary hypotheses about the cause or causes of the IAQ problems and present preliminary recommendations. In many cases, this is all that is necessary to resolve an IAQ problem.

In the **qualitative diagnostics phase**, the investigators characterize problems and complaints and evaluate the building's environmental control system design and performance relative to building performance criteria. They may evaluate suspected health problems and sample air for suspected pollutants. If discomfort or SBS is suspected, the investigators may do an engineering analysis of the HVAC system and other building support systems. If BRI is thought to be the problem, they may recommend immediate medical assistance along with appropriate biological or chemical sampling.

Finally, in the **quantitative diagnostics phase**, investigators perform on-site

investigations and laboratory and engineering analyses which include objective measurements of chemical, physical, and biological parameters, and subjective responses of occupants to their environment. The report generally includes a series of recommendations for remedial actions, maintenance procedures, and building systems operation.

SOLUTIONS TO SICK BUILDING PROBLEMS

Solutions to sick building problems usually include combinations of the following:

- **Pollutant source removal, modification, or substitution.** This is the most effective way to resolve an indoor air quality problem when specific sources causing the problem can be identified. This approach reduces or eliminates the emissions from a pollutant source, and may be used in combination with increased ventilation to dilute the indoor pollutant level. Examples of this method include cleaning or replacing contaminated filters in the HVAC system, removing water-stained ceiling tile and carpeting; instituting a no or restricted smoking policy; exhausting combustion products to the outdoors; and using and storing paints, adhesives, solvents, and pesticides in well-ventilated areas. In fact, resolution of a building which manifests BRI usually requires removal of the pollutant

source.

• **Time of use adjustment of a pollutant source.** This is another important IAQ control strategy. When feasible, pollutant sources should be used when the least number of people will be exposed, e.g., painting during weekend or non-working hours, and allowing building materials in new or remodeled areas to off-gas pollutants under high ventilation conditions before occupancy.

• **Increasing ventilation rates.** This can often be a cost-effective means of reducing indoor pollutant levels. In buildings with mechanical ventilation systems, outdoor air quantities should be provided at rates at least as high as those specified in appropriate standards or codes. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) proposed ventilation standard 62-1981R specifies a minimum of 15 cfm per person. It is important to check that ventilation systems are operated and maintained to provide *at least* these rates. Also, when there are strong pollutant sources, additional ventilation should be provided to dilute or exhaust contaminated air. Optimally, local exhaust should be employed to remove indoor pollution near such sources as restrooms, copying rooms, and printing facilities. (For a more detailed discussion of ventilation, see Indoor Air Facts No. 3, Ventilation and Air Quality in Offices.)

• **Air filtration and purification.** These processes can be used in combination with source control and ventilation where specific problems are identified and practical air cleaning options exist. Particulate filtration, for example, is a highly advanced technology, but increased performance can involve significantly higher costs. Ordinary furnace filters do not effectively capture pollen and other small particles, but higher performance filters are more expensive. Vapor and gas removal equipment is also available for some pollutants, but the technology for general use in ordinary occupied spaces is expensive and requires frequent maintenance.

• **Education.** This is the most important control method. If building occupants, management, building maintenance personnel, and others fully understand the sources and effects of indoor pollutants, they can act together to reduce indoor pollutant exposures.

FOR FURTHER INFORMATION

For additional information on indoor air pollution, contact your state or local health departments, non-profit agencies such as your local American Lung Association, or the following:

Division of Respiratory Disease Studies
National Institute for Occupational Safety and Health
944 Chestnut Ridge Road
Morgantown, WV 26505

Public Relations Office
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
1791 Tullie Circle, NE
Atlanta, Georgia 30329

Building Owners and Managers Association International
1250 Eye Street, NW
Washington, DC 20005

Additional copies of this fact sheet and others in the Indoor Air Series are available from:

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A1

Controlling Indoor Air Pollution

Airborne combustion products, toxic chemicals and radioactivity are more abundant indoors than outdoors. Should indoor air be regulated? If so, how? Putting risks in perspective helps to answer both questions

by Anthony V. Nero, Jr.

Because emissions from factories, power plants, waste dumps and automobiles can harm people as well as the biosphere in general, many countries have established extensive systems for identifying and controlling such pollution. Yet the greatest exposures to airborne combustion products, volatile toxic chemicals and radioactivity typically occur not outdoors but inside residences, offices and other nonindustrial buildings—settings that traditionally have been neglected by pollution-control agencies. Indeed, the health risks incurred merely by breathing the air at home can substantially exceed the general limits on risk that regulatory agencies impose in controlling pollutants in outdoor air or drinking water.

On the other hand, the risks from inhaling indoor pollutants are typically less than those associated with many voluntary activities that are regulated only marginally, if at all. By choosing to smoke cigarettes a person greatly increases the likelihood of later suffering from heart disease and lung cancer. Yet smoking is controlled indirectly in the U.S., where manufacturers are required only to print warnings on cigarette packages and in advertising.

The risks posed by indoor pollutants are in fact comparable in magnitude to those associated with exposure to chemicals or radiation in industrial settings. Living in certain houses and working at certain jobs are also similar in that both involve assuming some risk from exposure to pollutants in exchange for some personal benefit (a home or a salary). Yet the approach for regulating occupational exposures, which is based primarily on setting concentration limits for each pollutant, would be extremely difficult to apply in controlling the quality of indoor air. The causes of indoor air pollution are so diverse and the concentrations are so variable that continual monitoring would be required in virtually all buildings—more than 80 million in the U.S. alone. Moreover, governments may hesitate to intrude into private houses in the name of pollution control, preferring merely to warn people of the dangers and let them decide for themselves whether or not to take action.

Although building codes could be rewritten to reduce the chance of having high pollutant levels in new structures, the incidence of buildings with indoor concentrations five, 10 or even 100 times the average justifies an active effort to find and fix such buildings now. The effort may affect hundreds of thousands of houses in the U.S., requiring as large an environmental program as has ever been undertaken. The scope of such a program, the variability in structures and pollutant concentrations and the balancing of personal choice, risk and benefit make construction of an effective and sensible overall strategy for the control of indoor air quality a daunting challenge to the research and regulatory community.

The pollutants found in indoor air are similar to those found outdoors and in some instances actually come from outdoor sources. Yet the pollutants measured in the highest concentrations indoors are those that arise from within buildings or their substructures. They reach such levels simply because they are emitted into a small volume—the indoor atmosphere—from which they cannot easily escape.

One of the most familiar indoor pollutants is cigarette smoke, which is composed mainly of organic aerosols, or tiny airborne particles. Heating and cooking appliances that burn natural gas, kerosene, oil and wood (or peat, coal and dung, as is the case in some countries) also emit varying quantities of respirable particles along with carbon oxides, nitrogen oxides and trace organic chemicals. Less familiar indoor pollutants include methylene chloride, formaldehyde and a vast range of more complex organic chemicals that are given off by building materials, furniture, cleaning fluids, pesticides, paints and paint strippers. Respirable fibers of asbestos can be released indoors from insulating material in older buildings. Indoor air pollutants even include the products of living organisms or the organisms themselves, such as bacteria, fungi and house mites. Perhaps most disconcerting for the occupants of many houses is the fact that the ground on which the houses sit is a major source of radon, a radioactive gas that is generated naturally as a product of the nuclear decay of radium, an element present in trace quantities throughout the earth's crust.

These classes of pollutants, which