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ABSTRACT

This report overviews policy issues and research needs related to rural education in the South, focusing on educational systems in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. It is generally accepted that the South compare unfavorably with the rest of the nation with regard to education and workforce quality. Thus, educational improvement is seen as crucial to the continued development of the region. A review of educational research literature and of state-level education data for southern states examines student performance (the role of schools, families, and communities), educational finance, and education and economic development. The report concludes that the education process is strongly influenced by factors beyond the control of schools. From the perspective of research, more definitive answers are needed as to the exact nature of school, family, and community relationships in order to design appropriate educational improvement policies. With regard to educational finance, evidence suggests that little improvement will be achieved by marginal changes in school funding, and that existing variations between and within states may represent more than marginal differences. Finally, when considering education as a rural development strategy, it is important to note that issues such as school and student performance, family and community problems, and economic development are interrelated. Research and policy debates must recognize and focus on the nature of these interactions. Data tables include information on number of school districts, enrollment, school district size, revenues for public schools, current expenditures per student and as a percentage of personal income, average salaries for instructional staff and per capita income by state, and expenditures per pupil by state. Contains 76 references. (LP)

EDUCATION

in the Rural South

Policy Issues & Research Needs

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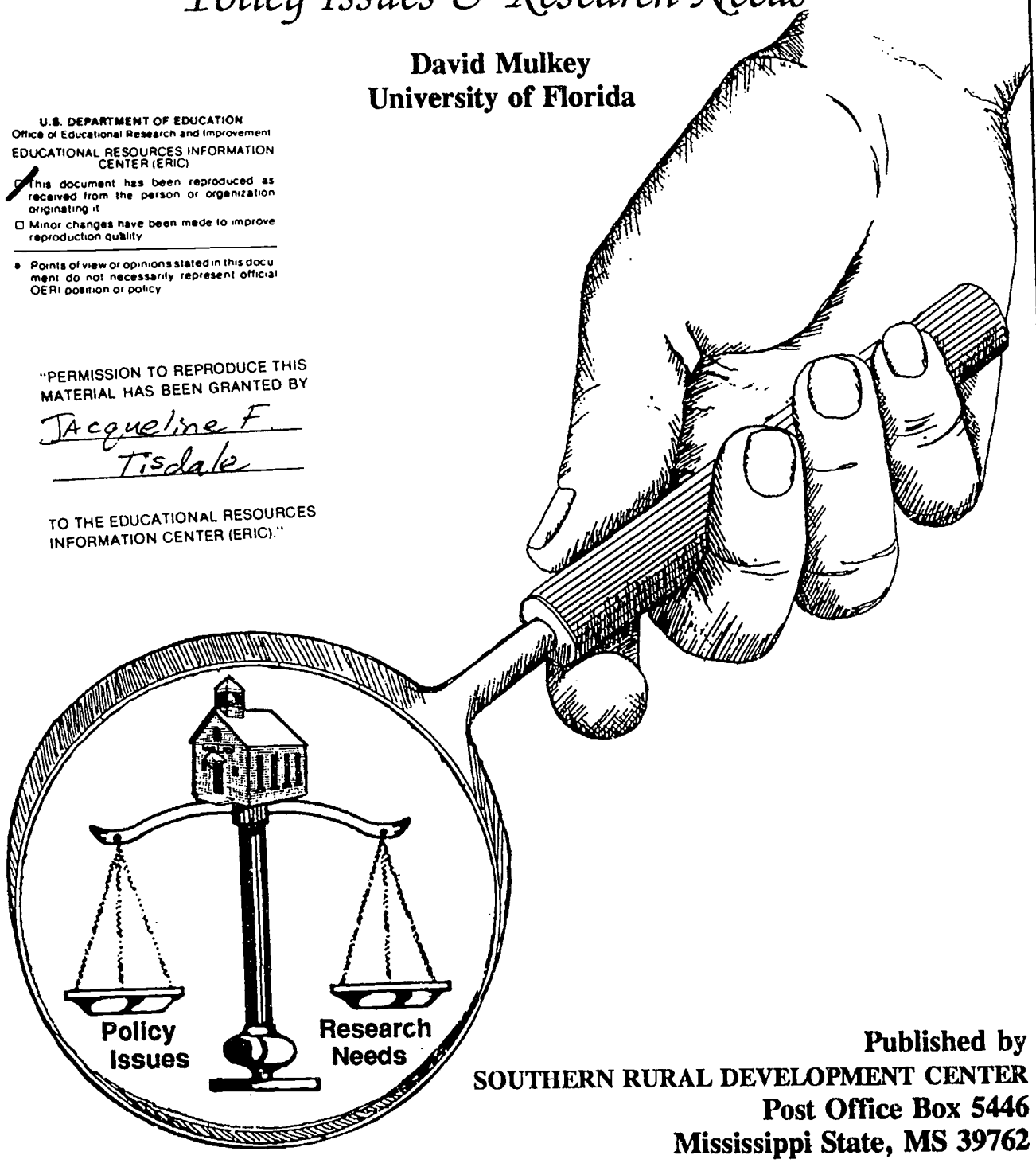

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EDUCATION IN THE RURAL SOUTH: POLICY ISSUES AND RESEARCH NEEDS

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INTRODUCTION

In recent years questions relating to education and the quality of public schools have become increasingly prominent in discussions of economic development in the Southern Region. Human capital development is the major theme of a Southern Rural Development Center (SRDC) Task Force Report, and education has been identified as a priority issue at major policy conferences in the South (Beaulieu, 1989; Jones, 1989). It is generally accepted that the South compares unfavorably with the rest of the nation as regards education and workforce quality, and educational improvements are seen as crucial to the continued development of the region. For rural areas, problems are seen as more severe and improvements as more crucial to continued development.

With the widespread interest in educational improvement in mind, this paper focuses on policy issues and research needs related to rural education in the South. The remainder of the introduction briefly reviews the national and regional interest in education and provides a short commentary on the status of education research. The following section addresses policy issues and research needs. Specific policy issues and research questions are based on a review of the education research literature and on state-level education data[1] for Southern states[2]. The overall intent is to provide a basis for further, more detailed research on rural education in the South. Information is provided on data sources (Appendix 2), and extensive citations are offered for interested readers.

The Importance of Education: A strong relationship between education and economic competitiveness is generally accepted at the national level, and concerns over continued economic growth have provided the primary motivation for the school reform movement (Hobbs, 1988). DeYoung (1989) notes the strength of this conviction by beginning his recent book ***Economics and American Education*** with a quote from the **National Commission on Educational Reform**:

> Knowledge, learning, information, and skilled intelligence are the new raw materials of international commerce and are today spreading throughout the world as vigorously as miracle drugs, synthetic fertilizers, and blue jeans did earlier. If only to keep and improve on the slim competitive edge we still retain in world markets, we must dedicate ourselves to the reform of our educational system for the benefit of all—

[1] An evaluation based on data at the school district level is beyond the scope of the research reported here. However, Appendix 2 provides information on data sources in an attempt to assist more detailed research efforts.

[2] The "South" in this paper refers to the states served by the Southern Rural Development Center. States included are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

> old and young alike, affluent and poor, majority and minority. Learning is the indispensable investment required for success in the "information age" we are entering.

DeYoung then continues to provide a listing of thirty-one other reports addressing school reform over the 1983-1988 period which sound similar themes.

Education is viewed as equally important in writings specific to the South. The SRDC Task Force report mentioned earlier identifies human capital issues (illiteracy, high drop out rates, and lower percentages of college educated adults) as major impediments to economic improvement and calls for a commitment to human capital investment as a long run development strategy. Education is considered the primary vehicle for improving regional economic performance.

Conclusions of the SRDC Task Force report are supported by a series of reports from the Southern Growth Policies Board (***Shadows in the Sunbelt, Rural Flight/Urban Might, Halfway Home and a Long Way to Go, and After the Factories)***. In addition, papers by other authors (Henry, 1987; Beaulieu, 1988; Billings, 1988; Mulkey and Henry, 1988; Rosenfeld, 1987 and 1988; Ross and Rosenfeld, 1987; Deaton and Deaton, 1988) note economic restructuring in the South and question the success of future development programs based on the rural industrialization strategies of the past.

In particular, rural areas in the South are viewed as being in a period of transition, a period in which the education and skill levels of the labor force are becoming increasingly critical to the welfare of rural residents and rural communities. National and international market forces continue to erode the competitive position of traditional rural industries while the forces of deregulation and structural shifts within the national economy are tending to further concentrate economic activity in metropolitan areas (Henry et al., 1986; Henry, 1987; Mulkey and Henry, 1988). At the same time, structural change within agriculture further reduces the number of jobs while modernization of traditional manufacturing industry and the emergence of technology oriented industries mean higher education requirements for most jobs (Beaulieu, 1989).

In short, a number of sources stress the importance of an educated, skilled workforce to the future of the South and call for increased development of the region's human capital. Clearly, education is strongly related to economic growth. However, when the term "development" is used in a broader sense to refer to economic vitality or capacity building, education is more paramount (Shaffer, 1989; Wilkinson, 1988). This approach focuses on the broader concepts of development and raises issues such as entrepreneurship, adaptability, innovation, and local control—all areas in which human capital plays a crucial role in success (Hansen, 1979 and 1992; Coffee and Polese, 1984; Jacobs, 1984; Ashby, 1984; Flora et al., 1991).

However, aside from the number of reports stressing the general importance of education to development, there is little in the way of an empirical foundation to support specific investments in improving education. Few seem to doubt that evident declines in productivity growth at the national level are linked to declines in school performance, but there has been little analysis of how school reform influences productivity growth (Hanushek, 1989; Levin, 1989; Bishop, 1989). At the regional or community level, the relationship between educational improvements and economic growth is less clear, and there is ample reason to suspect that the strength of the relationship is easily overstated (DeYoung, 1989; Carlin and Ross, 1987; Luytjes, 1971; Killian and Parker, 1991 and 1991a). It is not clear that increased investment will result in educational improvements, and it is also not clear as to how (or if) such efforts translate to economic improvement.

Education Research: Education, from the policy level to the classroom, represents a resource allocation problem (Levin, 1989; Monk, 1981), and since the publication of the seminal article on human capital by Schultz (1961), education has maintained a prominent place in the research literature. Building on human capital theory, researchers have looked extensively at questions of school/student performance, at the role of communities and families in the educational process, and at relationships between expenditures and school outcomes.

Much of the educational research in various disciplines, including education, is subject to the criticisms of being general in nature, of containing an urban bias, and being of limited usefulness to rural policy makers (Stevens, 1985; DeYoung, 1987). For example, Levin (1989) notes that, **"economic research on education is often viewed as exotic, arcane, and outside of the mainstream of what is normally viewed as educational research,"** and Hobbs (1987) notes the tendency for education policy to be based on **"beliefs"** rather than empirically supported conclusions about education. He notes the beliefs that large schools are more effective and efficient, that schools alone are responsible for educational outcomes, and that test scores are a good measure of education and can be used to judge the quality of schools.

Further, rural development research, with a few notable exceptions (i.e., Deaton and McNamara, 1984; Deaton, 1983; Deaton and Deaton, 1988; Clouser and Debertin, 1988; Chicoine and Ward, 1988; McNamamra et al., 1988; Rudnicki and Deller, 1989; Smith, 1989; Smith et al, 1992; Smith and DeYoung, 1992), has devoted little attention to education. However, rural development and education research, when taken together with available data, allow the identification of policy issues related to education and provide a basis for further research.

EDUCATION: POLICY ISSUES AND RESEARCH NEEDS

Rural Schools: Perhaps the most useful starting point for rural education research is to focus on increasing the available information on rural schools. As noted earlier, much of the available education research is perceived as having an urban bias and being of limited usefulness to rural education policy makers. Yet, there is evidence of perceived differences between education in rural and urban settings.

There is, for example, a National Rural Education Association and a Southern Rural Education Association; there are a number of centers in colleges of education which focus specifically on problems of rural schools; and there are (or have been in recent years) rural education programs in the Regional Educational Laboratories.[3] This perception of differences is supported by the work of Bender et al. (1985) which attests to the economic and social diversity among nonmetropolitan counties. There is, however, little hard evidence on how rural schools differ from their urban counterparts or on how rural schools are impacted by economic and social differences between rural and urban areas or by differences among rural areas.

The call by Stevens (1985) for a meaningful taxonomy of rural schools would seem to be a useful starting point. He notes the tendency in policy circles to speak of education in general or simply of rural education, practices which do not account for rural-urban differences and which blur distinctions between

[3]For examples of this work, see: Office of Educational Research and Improvement, 1989; Nachtigal, 1982; Horn et al., 1986; Appalachia Educational Laboratory, 1989. A listing of regional education laboratories and a map showing service areas is included as Appendix 1.

rural areas in different parts of the county. Stevens (1992) suggests a taxonomy of urban, suburban, and rural schools which includes context indicators (characteristics of the school district and community), input indicators (characteristics of students, staff, and fiscal inputs), process indicators (programs, leadership, etc.), and outcome indicators (both positive and negative).

Stevens acknowledges the difficulty of his suggestion with reference to the size of the school enterprise in the United States. This point is reflected in Table 1. Nationally, there are more than 15,000 school districts serving more than 40 million students. More than 3,000 school districts (21 percent of U. S. total) are in the Southern states. Together, Southern states operate more than 24,000

Table 1. Public Elementary and Secondary School Districts, Students and Graduates, By State, Southern States, 1989-90.

	School Districts	Counties	Schools	Enrollment Number	Enrollment Ranking	Graduates Number	Graduates Ranking
Alabama	129	67	1292	723343	21	36555	24
Arkansas	329	75	1094	434960	33	27343	20
Florida	67	67	2432	1772349	5	89000	18
Georgia	186	159	1728	1126535	9	56605	16
Kentucky	177	120	1394	630688	23	38693	13
Louisiana	66	64	1582	783025	18	35899	22
Mississippi	152	82	957	502020	28	25039	15
North Carolina	134	100	1949	1080744	10	64521	19
Oklahoma	604	77	1832	578580	26	35606	28
South Carolina	91	46	1103	616177	24	34600	23
Tennessee	141	95	1565	819660	15	47500	17
Texas	1062	254	5856	3328514	2	182057	27
Virginia	136	95	1765	985346	12	61268	14
South Total	3274	1301	24549	13381941		734686	
US Total	15367		83165	40526372		2324036	
South, % of US	21.3%		29.5%	33.0%		31.6%	

Source: Digest of Educational Statistics, 1969-1991, US Govt Printing Office and Information Please Almanac, 1988.

Notes: Louisiana "counties" are parishes. Virginia "counties" do not include 41 independent cities.

Rankings are among the fifty states.

separate schools serving more than 13 million students (33 percent of U.S. total). Four Southern states (Florida, Georgia, North Carolina and Texas) are among the ten largest state school systems in the country. The smallest Southern state in terms of enrollment (Arkansas) has over 435 thousand students and ranks 33rd in enrollment among the fifty states. In 1989-90 more than 734 thousand students graduated from high school in the South.

Beyond numbers of schools and school districts, efforts to collect data on the socioeconomic characteristics of rural school districts is complicated by inconsistencies between available data and school district organization. Most socioeconomic data is available at the county level and is reported with a metropolitan or nonmetropolitan distinction. In contrast, many state school systems are organized so that several school districts exist within one county while other states have county wide school districts which contain both urban and rural schools. Municipal school districts which are independent of surrounding counties are also common among Southern states. In either case, the development of socioeconomic data for areas served by rural schools is difficult, if not impossible, with existing data sources.

The extent of organizational differences between counties and school districts for Southern states is also indicated in Table 1. For each state, Table 1 reports the number of school districts and the number of counties. In most cases, the number of school districts is larger than the number of counties in the state. The typical Southern state also exhibits wide variation in terms of school and school district size within the state. Table 2 reports the average school size and the average size of school district (total enrollment divided by number of districts) and enrollment for the smallest and largest district in each state.

Table 2. Size Range of School Districts, Southern States, 1989-90.

	Average Size School	Average Size District	Smallest District	Largest District
Alabama	560	5607	270	68214
Arkansas	398	1322	96	12251
Florida	729	26453	855	266014
Georgia	652	6057	169	66532
Kentucky	452	3563	234	91738
Louisiana	495	11864	1573	84419
Mississippi	525	3303	200	32928
North Carolina	555	8065	780	751426
Oklahoma	316	958	18	41203
South Carolina	559	6771	615	51500
Tennessee	524	5813	203	106000
Texas	568	3134	5	190290
Virginia	558	7245	395	129144
South	545	4087	5	266014
U.S. Avg.	487	2637		

Source: Digest of Educational Statistics, 1969-1991, US Govt Printing Office and QED State by State School Guides, Summary of School Statistics, Quality Education Data, Inc.

Due to the complications suggested here, information is not available on the numbers of rural students in Southern states. Some insight can be gained by comparing the population of metropolitan and nonmetropolitan counties in each state. These data are presented in Table 3. Using these data as a guide, the Southern region as a whole is more rural than the nation with approximately thirty percent of the population in nonmetropolitan areas compared to less than twenty-three percent for the nation. Further, several Southern states exceed the regional average, and only two Southern states (Florida and Texas) are below the national average for nonmetropolitan population.

In short, it is quite likely that education in Southern states is, on the average, more rural in character than it is for the nation as a whole reflecting the higher degree of rurality in the region. Further, information on school and district size and state enrollments is consistent with Steven's (1985) hypothesis of wide variation among rural school districts between and within regions of the nation. The extent and nature of these differences and how (or whether) such differences influence the educational process remain open questions.

Education Input-Output Relationships: As noted in the introductory section, education is often viewed by economists as a problem of resource allocation. At the policy level, choices are required between education and a variety of other programs which compete for tax revenues, and within the school system, administrators and teachers must choose between a variety of options for affecting educational outcomes (Levin, 1988 and 1989; Monk, 1981). Available options for improving student achievement (i.e., reduced class size, higher teacher salaries, before/after school programs, computer aided instruction, etc.) have both different costs for implementation and different impacts on achievement within the school.

Table 3. Metropolitan and Nonmetropolitan Population Southern States and the United States, 1990.

	Total Pop.	Metro Pop.	Non-metro Pop.	Percent Non-metro
Alabama	4040587	2723000	1317000	32.60
Arkansas	2350725	943000	1408000	59.89
Florida	12937926	11754000	1184000	9.15
Georgia	6478216	4212000	2266000	34.98
Kentucky	3685296	1714000	1971000	53.49
Louisiana	4219973	2935000	1285000	30.45
Mississippi	2573216	776000	1798000	69.85
N. Carolina	6628637	3758000	2871000	43.31
Oklahoma	3145585	1870000	1276000	40.56
S. Carolina	3486703	2113000	1374000	39.40
Tennessee	4877185	3300000	1577000	32.34
Texas	16986510	13867000	3119000	18.36
Virginia	6187358	4483000	1704000	27.54
South total	77597917	54448000	23150000	29.83
US total	248709873	192726000	55984000	22.51

Sources: Total population; 1990 Census of Population and Housing: Summary Population and Housing Characteristics - United States; March 1992, Bureau of the Census and Metro and non-metro population; Statistical Abstract of the United States, Bureau of the Census, 1991.

Questions of student achievement have been examined extensively within the framework of production functions—inputs as represented by school, student, peer group, family, and community characteristics are systematically related to school outputs reflected in measures such as grades, test scores, graduation rates and college attendance (Hanushek, 1979; Cohn, 1979; Monk, 1989).[4] Outside of economics, the work of Coleman (1988; 1988a; 1990) focuses specifically on the role of community in education. In general, it is recognized that factors outside the school are critical to explaining educational outcomes. Benson (1982), for example, after acknowledging the role of the school in human capital formation, notes

> ...we recognize as well that families create human capital, and we may also postulate that human capital production may be affected by interactions between school and family as well as among school, family, and neighborhood. Indeed, one may also imagine that the family's-and-the-child's view of the expected future place of the child in the social order may influence production of human capital.

Major shortcomings of existing research relate to problems with the definition and measurement of inputs and outputs for the process of education and the lack of an adequate theoretical framework to guide research. Further, as noted earlier, little of the research focuses specifically on rural areas. Nevertheless, there appear to be consistent conclusions arising from this literature with implications for rural education policy and research needs in the South. Following Benson (1982), the discussion is organized around schools, families, and communities.

Schools

Much of the research in the general area of school input-output relationships has focused on relationships between student achievement and educational expenditures (inputs provided by the school). An excellent review is offered in the articles noted above by Hanushek (1986; 1989a). His work summarizes 38 published studies which contain 187 attempts to relate educational inputs to outputs. Summary results reported by Hanushek are reproduced in Table 4. Columns 1 and 2 report the measure of expenditure and the number of studies using that measure, respectively. The next two columns report the direction of the sign for significant coefficients, and the final column reports the number of studies for which that particular variable was insignificant.

Perhaps the most notable feature of the studies reviewed by Hanushek is the consistency with which results differ from those expected. As he notes, the conventional wisdom regarding education leads to the expectation of positive and significant coefficients for each of the measures indicated in Table 4. These are commonly accepted indicators of school quality and often represent the variables of focus in policy efforts to improve education. Yet, available research indicates insignificant relationships in the vast majority of studies reviewed. Hence, Hanushek's major conclusion, **"There is no strong or systematic relationship between school expenditures and student performance."** Schools and teachers were found to differ in effectiveness, but differences were not explained by the indicators of quality used in the various studies.

[4]Examples of this work are found in Hanushek (1986; 1989a), Summers and Wolfe (1977), Leibowitz (1974), and Murnane, et al. (1981).

Hanushek's results raise serious questions for educational policies formulated on the basis of expenditures or school and teacher characteristics. However, these results do not mean that expenditures are unimportant. As Hanusheck notes,"...there seems to be little question that money could count—it just does not consistently do so within the current organization of schools."

Table 4. Education Input-Output Studies: A Review of Results.

Input	Studies	+	-	Insignificant
Teacher/Pupil Ratio	152	14	13	125
Teacher Education	113	8	5	100
Teacher Experience	140	40	10	90
Teacher Salaries	69	11	4	54
Expenditures/Pupil	65	13	3	49
Administrative Inputs	61	7	1	53
Facilities	74	7	5	62

Hanushek, 1989

expenditures are unimportant. As Hanushek notes, **"...there seems to be little question that money could count—it just does not consistently do so within the current organization of schools."**

Identifying and evaluating effective organizational and program changes appears to be an important priority for those interested in school improvement. A useful approach is the one suggested by Levin (1988). He notes both the interest in school reform and budgetary restraints as reasons for increased attention to the analysis of cost effectiveness. Levin provides a suggested methodology and demonstrates the usefulness of his approach to analyzing educational alternatives. A key component of such a research effort will involve the establishment of linkages between researchers and education departments in the various states to develop consistent data reporting to support needed research.

In addition to evaluating organizational and programmatic changes within the context of schools, there also seems to be a need for additional research on the question of student achievement and relationships to various measures of school inputs. This is particularly true for efforts which work with more disaggregated data on achievement and a wider range of measures of inputs. For example, work by Summers and Wolfe (1977) found that, **"many school inputs do matter and that disadvantaged students can be helped by certain types of inputs."** They attribute their success in identifying significant relationships to their use of individual student observations and the ability to observe changes in achievement over time. Clearly, more studies with a similar degree of detail could provide useful inputs into policy debates over improving school quality.

Families

Beyond the results noted in the previous section, the other strong conclusion from the studies reviewed by Hanushek is the importance of family socioeconomic characteristics in explaining educational outcomes. He notes, **"Virtually regardless of how measured, better educated and wealthier parents have children who perform better on average."**

This conclusion has obvious implications for attempts to evaluate schools on the basis of student achievement without adjustments for the socioeconomic status of the students and families represented in the schools. More importantly, conclusions regarding the importance of socioeconomic status in explaining educational outcomes have implications for educational improvement programs which are limited to changing school level inputs. Implications are especially important for the rural South, an area where educational levels and incomes are generally lower than average and where poverty and under-unemployment is higher than average.[5] Following the conclusion about the importance of socioeconomic status, Hanushek (1989a) notes that the studies reviewed offered little in the way of insight into exactly how socioeconomic status influences the educational progress of students. As Benson (1982) notes, this is a critical question for education policy, and Summers and Wolfe (1977) argue that efforts to assist disadvantaged students in schools are dependent on knowing which school inputs are particularly helpful to such students. They found, for example, that students with lower test scores are distinctly helped by being in classes with higher achieving students, that students from lower income families benefit more from having teachers from higher rated colleges, and that small schools have a larger beneficial effect for black pupils. Work by Monk (1981) also suggests that the treatment of students in individual classrooms is related to decisions made in families outside of schools.

Research aimed at increased understanding of the family role in school achievement could begin with the work of Leibowitz (1974) and Benson (1982). The former developed a model of home investment in children in which the quality and quantity of both time and material goods inputs are influenced by the income and education of parents. Building on this work and that of others, Benson (1982) specifically examines relationships between socioeconomic status and the amount of time spent with children and the nature of the child-parent interactions. He found positive relationships between socioeconomic status and time available for children, the degree of cultural activities, and the extent of parent involvement in both school and non-school activities. His findings relative to time and the nature of activities are generally consistent with conclusions by Leibowitz (1974) and Murnane et al. (1981) that non-material home inputs (people) seem to matter more than material inputs (things).

In short, there appears to be little doubt that the role of families is critical to the success of public school outcomes and that family roles vary significantly with socioeconomic status. However, more research is clearly needed to assist policy makers in addressing non-school factors which influence educational progress.

Communities

Finally, in the area of educational input-output relationships, there is ample evidence to support the idea that communities play a role in educational achievement. Clearly, localities are important from the standpoint of providing financial support (Chicoine and Ward, 1987), and recent work by Smith (1989; 1992) argues that economic opportunities existing in the community may influence levels of support for education and the quality of school systems. The latter argument is that high quality jobs with higher educational requirements increase student-family expectations regarding returns to education and also increase community expectations of the school system in terms of quality education programs.

The role of the community, however, is even more pervasive in influencing school outcomes. In his household model of human capital formation, Benson (1982) allows for what he terms **"neighborhood effects"** noting that, **"It is unrealistic to assume that attitudes and actions are confined within the single family."** The idea is that through interactions with other children and families within

[5]See Beaulieu (1989) for a detailed discussion of these measures for the rural South.

a neighborhood, students receive either positive or negative reinforcement relative to actions in the school or within their own family. In other words, the ability of parents and schools to influence student progress is, in some way, dependent on the community.

An idea similar to that of Benson has been developed more formally by Coleman (1988; 1988a; 1989). He recognizes the role of physical, financial and human capital, and then he suggests an additional **"social capital"** found to reside in relationships among people within a community. More importantly, Coleman argues that social capital is important in the creation of human capital.

Coleman's work is best illustrated with brief reference to his research. He notes that students (both Catholic and non-Catholic) in Catholic schools exhibit dramatically lower drop out rates than do similar students in public schools or in other private schools. Coleman found similar results for students from single-parent families in Catholic schools, students traditionally considered to be at a high risk for dropping out of school. He also found that other religious (non-Catholic) schools have performance characteristics similar to those of Catholic schools with respect to drop out rates.

The policy implications of Coleman's work lie in his explanation of the differences in drop out rates between religious and private schools. Rather than being a function of school quality (school provided inputs), he concludes that the differences are due to the community within which the school functions. The religious tie provides the basis for a community of parents, students, and school personnel, and relationships within this community (social capital) reinforce and support school outcomes. Results from Coleman's work are supported by recent research by Smith, et al. (1991) which found social capital to be important in explaining differences in drop out rates among communities in the South. More importantly, both Coleman and Smith, et al. found that strong communities tend to offset problems in families.

An alternative theoretical construct for explaining the effect of community is found in Akerlof's (1991) recent work on individual decision making. Although addressing behavior in different situations, he argues that individuals tend to make decisions based on more salient (immediate) aspects of the decision while placing less weight on the longer run and more problematic aspects of the decision. It may well be that the role of social capital (community) in Coleman's findings is to alter individual perceptions of the benefits and costs associated with education, an argument similar to that cited earlier by Smith (1989; 1992).

Two points seem important by way of policy implications relative to the rural South. First, the dominant school policy of the past fifty years has been one of school consolidation which has had the effect of reducing ties betweens schools and the type of functional communities surrounding the religious institutions studied by Coleman. Further, to the extent that social and economic change in the rural South has triggered a **"crisis of community"** as suggested by Wilkinson (1988), education reform efforts may well be frustrated by events outside the schools. That is, poor, less vital communities may provide an environment within which school improvement is difficult, if not impossible, without broader efforts focused on community improvement.

As for research implications, the available evidence suggests that more studies similar to those by Smith and DeYoung (1992) and Broomhall and Johnson (1992) which focus on understanding school-community interactions are a high priority. This type of research could provide a foundation for the design of community efforts and programs intended to support school outcomes. The call by the SRDC Task Force (Beaulieu, 1989) for family, school, and community partnerships appears to be appropriate, but more guidance is needed on the exact nature of such activity. Several suggestions have been offered (Mulkey, 1992; Nachtigal and Hobbs, 1988) and implemented (Nachtigal, 1982). What remains is the

necessary research and evaluation to identify successful programs and to guide their implementation on a wide spread basis.

Educational Finance: Beyond questions related specifically to rural schools and issues relating to expenditures and student performance addressed in previous sections, general issues of education finance remain paramount in policy debates. Funding education remains a major, if not the major, expenditure item in the budgets of state and local government, and questions of equity relating to fiscal capacity, educational needs, and local tax effort are paramount in policy debates (Alexander, 1982). Importantly, most such issues are directly relevant to questions of improving education in the rural South.

Essentially, financing education is a state and local government function with some trend in recent years towards an increased role for state governments. Typically, state funds are allocated to school districts using a formula that makes some effort to account for wealth disparities at the local level.

Federal efforts in educational funding did increase substantially as a part of the "War on Poverty" during the late 1960s and early 1970s. However these funds are restricted to the support of compensatory education programs, and federal funds have never amounted to more than ten percent of total expenditures. (Dubin, n.d.; Chicoine and Ward, 1988; Hanushek, 1989). Southern states tend to differ from national averages in that states generally provide a larger share of school funds. Table 5 presents data on education revenues for Southern states, by source, for the year 1988-89. Federal support exceeds nine percent of total revenues in six of the thirteen Southern states (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, and Tennessee). With the exceptions of Virginia and Texas, more than fifty percent of revenues are from state sources, averaging slightly over fifty percent for the region as a whole. In three states (Alabama, Kentucky, and North Carolina) the state share of school funding exceeds sixty percent of total funding. Local government expenditures as a percentage of total revenues range from a low of twenty-two percent in Kentucky to a high of sixty-one percent in Virginia. Total expenditures for public elementary and secondary education amounted to more than fifty-two billion dollars across the Southern Region in 1988-89.

In addition to variations in the share of education expenditures coming from state as opposed to local sources, absolute levels of education expenditures vary across the Southern states. All Southern states are below national averages in terms of expenditures on a per pupil basis. Table 6 reports per pupil expenditures and rank among the fifty states for the year 1988-89. For per pupil expenditures, only Florida and Virginia approach the national average and rank in the upper one-half of all states.

Variations in expenditures, however, do not alone suggest disparities in educational effort among states. More insight is offered through data comparing expenditures to state income (Table 6) and through data on salaries for instructional staff (Table 7). Tables 6 and 7, together, indicate that some of the variation in spending across states is explained by differences in average salaries. The five Southern states (Florida, Georgia, North Carolina, Texas and Virginia) with the highest per pupil expenditures (Table 6) are also the five states with the highest average salaries for instructional staff in the region. The same states also have the highest per capita incomes in the region.

Southern states tend to rank higher among the fifty states when expenditures as a percent of per capita incomes are compared. Here the region as a whole is only slightly below the national average (3.9 percent versus 4.0 percent), and six states (Arkansas, Louisiana, Mississippi, Oklahoma, South Carolina and Texas) exceed the national average. Interestingly, the two states with the highest per pupil expenditures (Florida and Virginia) are the lowest in the region when comparing expenditures to incomes.

Southern states, in general, compare favorably in terms of average instructional salaries as a percent of per capita income in the state (Table 7). Four states (Arkansas, Florida, Oklahoma, and Virginia) are below the national average, one state (Texas) is close to the average, and other Southern states are above average. Perhaps more insight into the dynamics of educational finance is offered by data in Tables 8-11. Data are presented for five points in time over the 1969-70 to 1988-89 time period for expenditures per pupil, real expenditures per pupil, nominal salaries, and real salaries. For each data series, the tables present the average annual rate of change over the entire time period. Thus, the data allow evaluation of the extent to which Southern states have increased their commitment to education over time.

Over the time period reported in Tables 8-11, national expenditures on education, measured in nominal dollars, increased at an annual rate of 8.7 percent. Among Southern states, only two states (Kentucky and Louisiana) increased educational expenditures at a rate below that of the nation as a whole, Florida increased expenditures at the same rate as the nation, and all other Southern states exceeded the national average rate of increase. Similar results are indicated for real (inflation adjusted) increases in expenditures. Regionally, expenditures for education in real terms have increased at a rate of 2.9 percent per year. Only Louisiana and Kentucky failed to improve their rank among the fifty states in terms of educational spending over the 1969/70-1989/90 period. However, at the end of the period, only Florida and Virginia ranked among the top one-half of all states in terms of per student expenditures.

Southern states also exhibit trends in increasing salaries for instructional staff over the twenty-year period reported in Tables 10-11. The rate of increase for the Southern region exceeded that of the nation in both nominal and real terms, and a majority of Southern states exceeded the average rate of increase for the nation. The national average salary level exceeded that of the Southern region by almost twenty percent in 1969-70 whereas the gap was less than sixteen percent in 1989-90.

Clearly, there is a relationship between state incomes and expenditures on education. Recent work at the Economic Research Service (Dubin, n.d.; Reeder, 1989; Jansen, 1991) found similar results at the state level with data for 1987 and at the county level based on 1982 data. When data for all counties in the nation were considered, metropolitan counties were found to outspend their nonmetropolitan counterparts by approximately eleven percent in 1982. In general, states and/or counties with higher personal incomes had higher total spending on education.

National data, however, masked considerable variation in spending at the state and local level. State data on education expenditures presented by Jansen (1991) revealed higher expenditures in nonmetropolitan counties in all Southern states with the exceptions of Tennessee and Virginia in 1982, and in these two states, differences were not large. However, the fact that considerable variation remained across counties, and the fact noted earlier relative to multi-district counties, precludes a similar conclusion for all nonmetropolitan school districts. For the South, the studies by the Economic Research Service do raise questions of particular import when educational expenditures are examined by type of non-metropolitan county. They found expenditures to be lowest in counties classified as **"Persistent Low Income"** and counties classified as **"Manufacturing Dependent."** Both types of these counties are predominant in the rural South (Beaulieu, 1989).

Data reviewed here and other research findings demonstrate an increasing commitment to education for the Southern region as a whole and indicate some state success in equalizing expenditures. However, questions remain about the extent of variation across school districts and about the extent to which such differences represent differing availability of educational inputs to students. More detailed studies are needed for definitive conclusions, and such studies must rely on more current data to capture changes such as recent court decisions in Texas and Kentucky which focused on the equalization of spending across school districts (Dubin, n.d.). Further, there have been no attempts to address the issue

of expenditure disparities or equity issues across state lines. For example, the state in the South with the lowest per student expenditures (Mississippi) spends only sixty-five percent of the amount spent in Virginia, the Southern state with the highest expenditures. Again, as noted earlier, some variation is explained by salary differences, but there is no evidence to suggest implications for the quality of the educational process.

Beyond studies which examine educational expenditures within existing institutional arrangements, there appears to be a need for research which focuses on the design of alternative arrangements for financing education. The education finance literature recognizes that school finance must consider factors other than the equalization of expenditures -- that student needs, program delivery costs, and other factors vary dramatically across school districts. An alternative worthy of consideration is that by Clouser and Debertin (1988) of designing finance systems which fund "**programs and not students.**"

A program based funding approach would focus on the numbers and types of students, the types of programs desired, and the cost of program delivery in particular school environments. School budgets could then be constructed to deliver specific programs to specific schools. A research effort focusing on program costs would be a prerequisite to implementation of this approach with the first step being the development of data reporting systems designed to allow cost assessment (Levin, 1988). Resulting research would also be useful with regard to addressing questions of equity in funding under existing school finance plans.

Finally, with respect to educational finance, it may be time to reexamine the role of federal support for education. Unlike state aid in most cases, current federal programs are targeted towards students without consideration for the ability of the state or locality to finance needed educational programs. An open question is whether increased or existing federal support should be targeted to poor areas based on local fiscal abilities (Reeder, 1989). Also, another open question relates to increased federal support for education based on the increased mobility of the population and the national emphasis on competitiveness in the international arena. Either type of shift in federal policy has obvious implications for rural areas.

Education and Economic Development: Remaining questions for research and policy analyses focus specifically on the set of relationships between education (or human capital formation in general) and economic development in rural areas. Here, the available evidence is mixed, and there is no clear specification of the role of human capital in economic development. On the one hand, it is difficult to imagine a successful regional (or rural) development effort without high levels of human capital development and quality education systems. On the other hand, it is equally clear that human capital investment at the local or regional level is only one of a complex set of interrelated factors influencing economic growth. Further, it seems that the acquisition of human capital is, itself, influenced by a similarly complex set of factors. Understanding these relationships may be the most important set of research needs facing those interested in rural education and rural economic development.

At the national level, Teixeira and Swaim (1991) point to an emerging imbalance between the demand and supply of educated workers. The demand for skilled workers is increasing as a result of compositional change among industries and content change in existing jobs. At the same time, a national slowing in the rate of increased educational attainment and declines in cognitive achievement combine to reduce the supply of skilled workers. They reach no conclusions for rural areas, however, other authors in the same volume (McGranahan and Ghelfi, 1991; Killian and Parker, 1991) argue that education levels were not important factors in explaining employment declines in rural areas during the 1980s. Their evidence points to a lack of demand for skilled workers (a shortage of jobs) with the implication that education investments are not the best way to address employment problems in rural areas. Results noted above differ from those of McNamara, et al. (1988) and Rudnicki and Deller (1989)

which in Virginia and Maine, respectively, found positive relationships between human capital stocks and flows and economic growth. A significant part of this research was the distinction between the stock and flow of human capital and the use of a lagged estimation structure. This, again, is research which suggests that education and economic development relationships may be more complex than commonly supposed.

Beyond the mixed signals regarding human capital investment at the local level, none of the available research provides a sufficient basis to guide public investment into particular types of education and/or training programs. More definitive answers may lie in work which combines or synthesizes research from different disciplines. In addition to earlier cited work on school and community relationships, previous research in regional development appears particularly promising as a basis for future work (Jacobs, 1984; Ashby, 1984; Coffey and Polese, 1984; Hansen, 1979; Hansen, 1992).

Hansen and Coffee and Polese, for example, focus specifically on the role of innovation and entrepreneurship as keys to development, clearly areas in which human capital formation must play a critical role. Hansen and Wilkinson focus on elements of cooperation and common action, areas which again highlight a role for education as a part of development strategies. The other works cited (Jacobs and Ashby) also tend to focus on non-place aspects of development, particularly the concept of a place as part of a larger whole and the ability of regions to adapt to changing conditions over time.

In short, development must be viewed as more than simple economic or demographic change. Broader issues involved include entrepreneurship, adaptability, innovation, and local control -- all areas in which human capital is important. Yet, all the authors cited recognize that development potential is predicated on the situation facing a particular place. In the words of Ashby, "**Economic development cannot be bought, stolen, or even given away; it must be accomplished starting with the particular circumstances and opportunities at hand.**" A key role for research is to determine exactly how public education fits within this development creation process.

CONCLUDING COMMENTS

This paper has provided a general review of issues surrounding education improvements and relationships between education and rural economic development. Specific areas discussed include student performance (the role of schools, families and communities), education finance, and education and economic development. As a guide to future research and policy analysis, several conclusions appear appropriate.

First, it is clear that events in the school—the educational process itself—are strongly influenced by factors which exist beyond the school and over which schools have little if any control. From the perspective of research, more definitive answers as to the exact nature of school, family, and community relationships are needed to allow the design of appropriate educational improvement policies.

Without an increased understanding of the role played by non-school factors, doubts are immediately raised about the effectiveness of reform efforts which focus specially on schools without explicitly addressing non-school influences. Equally dubious are state and federal efforts to evaluate schools based on output measures such as test scores with no attempt to adjust for the influence of family or community inputs over which schools have little or no control.

In short, designing policies to address an educational process which differs fundamentally across schools because of family/community socioeconomic and demographic characteristics is more difficult than if such differences were not the case. Further, to the extent that such differences, in some way, change the nature of the educational process, the most effective use of educational resources may well vary also. Again, answers lie in additional research on the performance of individual students in particular schools.

Related sets of research needs and policy issues surround issues of school finance. Evidence suggests that little will be achieved by marginal changes in school funding, but existing variation between and within states may represent more than marginal differences. More information on the extent of differences could, in combination with improved information on student and school performance, contribute to the design of more equitable and efficient school finance systems. Both sets of issues are particularly important for rural areas. Especially important in this regard is a re-examination of the federal role in the support of education.

Finally, when considering education as a rural development strategy, it is important to note evidence that the set of issues here—school/student performance, family and community problems, and economic development are not unrelated issues. Success in one area may well depend on policies to address related problems in other areas. Research and policy debates must recognize and focus on the nature of these interactions.

Table 5. Revenues For Public Elementary and Secondary Schools, In Thousands of Dollars, By Source, Southern States, 1988-89.

	Total	Federal sources		State sources		Local and other	
State	Revenue	Amount	Percent	Amount	Percent	Amount	Percent
Alabama	2552053	273066	10.7%	1574361	61.7%	704626	27.6%
Arkansas	1473751	143066	9.7%	826797	56.1%	503888	34.2%
Florida	8396809	542291	6.5%	4340627	51.7%	3513891	41.8%
Georgia	4693011	290497	6.2%	2507354	53.4%	1895160	40.4%
Kentucky	2071522	206637	10.0%	1409846	68.1%	455039	22.0%
Louisiana	2787869	293594	10.5%	1471391	52.8%	1022884	36.7%
Mississippi	1440071	231988	16.1%	827323	57.5%	380760	26.4%
N. Carolina	4279584	286944	6.7%	2828086	66.1%	1164554	27.2%
Oklahoma	2127862	117939	5.5%	1188411	55.9%	821512	38.6%
S. Carolina	2453009	200598	8.2%	1227429	50.0%	1024982	41.8%
Tennessee	2731861	249546	9.1%	1257920	46.0%	1224395	44.8%
Texas	13110311	979357	7.5%	5670469	43.3%	6460485	49.3%
Virginia	4636663	240850	5.2%	1568895	33.8%	2826918	61.0%
South Total	52754376	4056373	7.7%	26698909	50.6%	21999094	41.7%
US Total	191210310	11872419	6.2%	91158362	47.7%	88179529	46.1%

Source: Digest of Education Statistics, 1991, U.S. Government Printing Office.

Note: Includes revenues from local and intermediate sources, gifts, and tuition and fees from patrons; excludes revenues for state education agencies.

Table 6. Current Expenditures Per Student and as a Percent of Personal Income, By State, Southern States, 1988-89.

	Expenditure per student		Expenditure as a percent of total personal income	
	Total	Ranking	Number	Ranking
Alabama	3019	47	3.9%	32
Arkansas	3023	46	4.3%	23
Florida	4210	21	3.2%	49
Georgia	3616	35	3.9%	35
Kentucky	3009	48	3.7%	39
Louisiana	3138	45	4.4%	20
Mississippi	2726	49	4.5%	14
North Carolina	3594	36	3.9%	33
Oklahoma	3159	44	4.0%	30
South Carolina	3441	40	4.4%	16
Tennessee	3248	43	3.7%	42
Texas	3582	37	4.4%	17
Virginia	4225	20	3.6%	43
South Avg.	3534		3.9%	
US Avg.	4303		4.0%	

Source: Digest of Educational Statistics, 1969-1991
US Govt Printing Office and U.S. Stat. Abstract 1991.

Notes: Current expenditures exclude capital outlay and interest on debt for public elementary and secondary schools.
Current expenditures are per full-time enrollment, fall 1988.
Personal income is total personal income for each state.
Regional averages are weighted by full-time enrollment and population.

Rankings are among the fifty states.

Table 7. Average Salaries for Instructional Staff and per Capita Income by State, Southern States, 1988-89.

	Average salary of instruct'l staff		State per capita personal income		Instruct'l salary as pct of p.c.p.i.	
	Amount	Ranking	Amount	Ranking	Number	Ranking
Alabama	26150	38	13625	44	191.9%	12
Arkansas	22193	50	12901	49	172.0%	35
Florida	28697	28	17647	18	162.6%	44
Georgia	29752	24	16053	28	185.3%	17
Kentucky	26026	39	13743	40	189.4%	14
Louisiana	23150	47	12921	48	179.2%	25
Mississippi	23297	45	11724	51	198.7%	5
North Carolina	26833	34	15198	35	176.6%	28
Oklahoma	23200	46	14154	38	163.9%	43
South Carolina	26762	35	13634	43	196.3%	9
Tennessee	26512	37	14694	36	180.4%	21
Texas	27565	30	15702	32	175.6%	29
Virgin	29655	25	18927	11	156.7%	47
South Avg.	27040		15455		175.0%	
US Avg.	30969		17596		176.0%	

Sources: Digest of Educational Statistics, 1969-1991, US Govt Printing Office and Survey of Current Business August 1982, August 1988, and US. Stat. Abstract 1991, Pg 20, 442

Notes: "Instruction'l salary as pct of p.c.p.i." shows the average salary of instructional staff as a ratio of per capita personal income for each state. Regional averages are weighted by population.

Rankings are amont the fifty states.

Table 8. Expenditure Per Pupil By State, and Rank Among States, Selected Years, Southern States.

	1969/70		1974/75		1979/80		1984/85		1988/89		Annual
	Exp.	Rank	Exp.	Rank	Exp.	Rank	Exp.	Rank	Exp.	Rank	Change
Alabama	512	48	824	49	1520	49	2233	48	3019	47	9.8%
Arkansas	511	49	827	48	1472	51	2324	45	3023	46	9.8%
Florida	683	27	1039	30	1834	31	3011	28	4210	21	10.0%
Georgia	539	46	921	41	1491	50	2475	43	3616	35	10.5%
Kentucky	502	50	802	51	1557	45	2149	50	3009	48	9.9%
Louisiana	589	40	938	40	1629	42	2736	37	3138	45	9.2%
Mississippi	457	51	849	45	1568	44	2197	49	2726	49	9.9%
N. Carolina	570	42	1133	24	1635	41	2457	44	3594	36	10.2%
Oklahoma	554	44	950	37	1810	33	2672	39	3159	44	9.6%
S. Carolina	567	43	906	42	1597	43	2583	42	3441	40	10.0%
Tennessee	531	47	868	44	1523	48	2247	47	3248	43	10.0%
Texas	551	45	808	50	1740	36	2959	31	3582	37	10.4%
Virginia	654	35	999	34	1824	32	2948	32	4225	20	10.3%
South Avg.	750		1206		2092		3222		4303		9.6%
US Avg.	566		914		1635		2586		3581		10.2%

Note: Expenditure per pupil is total public elementary and secondary school current expenditures divided by enrollment for each state.
Annual change is the annualized change in per pupil expenditure, 1969/70-1988/89. (Calculated as (88/89 exp./ 69/70 exp.)^1/19 - 1.)
Rankings are among all fifty states and the District of Columbia.
The regional average is weighted by full-time enrollment.

Source: Digest of Educational Statistics, 1969-1991, US Govt Printing Office

Table 9. Real Current Expenditure Per Pupil By State, and Rank Among States, Selected Years, Southern States.

	1969/70		1974/75		1979/80		1984/85		1988/89		
	Exp.	Rank	Exp.	Rank	Exp.	Rank	Exp.	Rank	Exp.	Rank	Annual Change
Alabama	1218	48	1390	49	1774	49	2013	48	2324	47	3.5%
Arkansas	1216	49	1395	48	1717	51	2095	45	2327	46	3.5%
Florida	1625	27	1753	30	2140	31	2715	28	3241	21	3.7%
Georgia	1283	46	1554	41	1740	50	2232	43	2783	35	4.2%
Kentucky	1195	50	1353	51	1817	45	1938	50	2317	48	3.5%
Louisiana	1403	40	1582	40	1901	42	2467	37	2415	45	2.9%
Mississippi	1087	51	1432	45	1830	44	1981	49	2099	49	3.5%
N. Carolina	1358	42	1911	24	1908	41	2215	44	2767	36	3.8%
Oklahoma	1318	44	1602	37	2112	33	2409	39	2432	44	3.3%
S. Carolina	1351	43	1528	42	1864	43	2329	42	2649	40	3.6%
Tennessee	1264	47	1463	44	1777	48	2026	47	2500	43	3.7%
Texas	1312	45	1363	50	2030	36	2668	31	2757	37	4.0%
Virginia	1558	35	1684	34	2129	32	2658	32	3253	20	3.9%
South Avg.	1347		1541		1908		2332		2757		3.8%
US Avg.	1786		2034		2441		2906		3313		3.3%

Source: Digest of Educational Statistics. 1969-1991, US Govt Printing Office and Business Statistics, 1961-88; Survey of Current Business, B.E.A., U.S. Dept. of Commerce.

Note: Expenditure per pupil is total public elementary and secondary school expenditures divided by full-time enrollment for each state.
Annual change is the annualized change in per pupil expenditure, 1969/70-1988/89. (Calculated as (69/70 exp./ 88/89 exp.)^1/19 - 1.)
Dollar amounts are expressed in 1982 dollars.
Rankings are among all fifty states and the District of Columbia.

Table 10. Average Salaries of Instructional Staff and State Rankings, By State, Selected Years, Southern States.

	1969/70		1974/75		1979/80		1984/85		1989/90		
	Sal.	Rank	Sal.	Rank	Sal.	Rank	Sal.	Rank	Sal.	Rank	Annual Change
Alabama	6954	48	9503	42	13338	47	20923	39	26700	41	7.0%
Arkansas	6461	50	9021	48	12704	50	19318	47	22693	50	6.5%
Florida	8785	23	10780	26	14875	30	22480	29	30275	26	6.4%
Georgia	7520	40	10641	27	14547	33	21560	33	31685	24	7.5%
Kentucky	7325	41	9240	43	15350	28	21090	37	27482	39	6.8%
Louisiana	7264	42	9800	37	14020	41	19900	44	25036	44	6.4%
Mississippi	5959	51	8338	50	12274	51	16469	51	25146	43	7.5%
N. Carolina	7762	37	11275	22	14445	36	21556	34	28952	32	6.8%
Oklahoma	7257	43	9208	44	13500	46	19680	45	23944	47	6.2%
S. Carolina	7069	47	9770	39	13670	44	21029	38	28453	34	7.2%
Tennessee	7187	45	9878	36	14193	39	20850	40	27949	36	7.0%
Texas	7598	39	10136	34	14729	31	24073	23	28549	33	6.8%
Virginia	8364	27	11279	21	14655	32	22085	31	31693	23	6.9%
South Avg.	7561		10167		14314		21724		28494		6.9%
US Avg.	9047		12070		16715		24644		32723		6.6%

Source: Digest of Educational Statistics, 1969-1991, US Govt Printing Office

Note: Instructional staff includes supervisors, principals, classroom teachers, and other instructional staff. Annual change is annualized change in average instructional salary 1969/70-1988/89. (Calculated as (69/70 sal./ 89/90)^1/20 - 1.) Rankings are among all fifty states and the District of Columbia.

Table 11. Average Real Salaries of Instructional Staff, State Rankings, by State. Selected Years, Southern States.

	1969/70		1974/75		1979/80		1984/85		1989/90		
	Sal.	Rank	Sal.	Rank	Sal.	Rank	Sal.	Rank	Sal.	Rank	Annual Change
Alabama	16557	48	16025	42	15564	47	18867	39	19575	41	0.8%
Arkansas	15383	50	15212	48	14824	50	17419	47	16637	50	0.4%
Florida	20917	23	18179	26	17357	30	20271	29	22196	26	0.3%
Georgia	17905	40	17944	27	16974	33	19441	33	23229	24	1.3%
Kentucky	17440	41	15582	43	17911	28	19017	37	20148	39	0.7%
Louisiana	17295	42	16526	37	16359	41	17944	44	18355	44	0.3%
Mississippi	14188	51	14061	50	14322	51	14850	51	18435	43	1.3%
N. Carolina	18481	37	19013	22	16855	36	19437	34	21226	32	0.7%
Oklahoma	17279	43	15528	44	15753	46	17746	45	17554	47	0.1%
S. Carolina	16831	47	16476	39	15951	44	18962	38	20860	34	1.1%
Tennessee	17112	45	16658	36	16561	39	18801	40	20490	36	0.9%
Texas	18090	39	17093	34	17187	31	21707	23	20930	33	0.7%
Virginia	19914	27	19020	21	17100	32	19914	31	23235	23	0.8%
South Avg.	18002		17144		16703		19589		20890		0.7%
US Avg.	21540		20354		19504		22222		23990		0.5%

Source: Digest of Educational Statistics, 1969-1991, US Govt Printing Office

Note: Instructional staff includes supervisors, principals, classroom teachers, and other instructional staff.
Annual change is annualized change in average instructional salary, 1969/70-1989/90. Calculated (69/70 sal./ 89/90 sal.)^1/20 - 1.)
Rankings are among all fifty states and the District of Columbia.
Implicit price deflator, gross national product, is used to express all salary figures in 1982 dollars.

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APPENDIX I

Regional Laboratories[6]

Northeastern Region
The Regional Laboratory for Education Improvement of the Northeast and Islands
Andover, Massachusetts
Director: David P. Crandall
Connecticut, Maine, Massachusetts, New Hampshire,
New York, Puerto Rico, Rhode Island, Vermont, Virgin Islands.

Mid-Atlantic Region
Research for Better Schools
Philadelphia, Pennsylvania
Director: John E. Hopkins
Delaware, Washington, D.C., Maryland, New Jersey, Pennsylvania

Appalachian Region
Appalachia Educational Laboratory
Charleston, West Virginia
Director: Terry L. Eidell
Kentucky, Tennessee, Virginia, West Virginia

Southeastern Region
Southeastern Regional Vision for Education
Greensboro, North Carolina
Director: Roy H. Forbes
Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina

Southwestern Region
Southwest Educational Development Laboratory
Austin, Texas
Director: Preston C. Kronkosky
Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Central Region
Mid-continent Regional Educational Laboratory
Aurora, Colorado
Director: C. L. Hutchins
Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, Wyoming

Midwestern Region
North Central Regional Educational Laboratory
Oak Brook, Illinois
Director Jeri Nowakowski
Illinois, Indiana, Iowa, Michigan Minnesota, Ohio, Wisconsin

Northwestern Region
Northwest Regional Educational Laboratory
Portland, Oregon
Director: Robert R. Rath
Alaska, Idaho, Montana, Oregon, Washington

Western Region
Far West Laboratory for Educational Research and Development
San Francisco, California
Director: Dean Nafziger
Arizona, California, Nevada, Utah

Pacific Region
Pacific Region Educational Laboratory
Honolulu, Hawaii
Director: John W. Kofel
American Somoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Hawaii, Republic of the Marshall Islands, Republic of Palau

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[6]SOURCE: R & D Preview, Council for Education Development and Research, Suite 601, 2000 L Street N.W., Washington, D.C., 20036 (202/223-1593).

APPENDIX 2

A Bibliography of Data Sources

State Level Data

Alabama

Annual Report 1989: Statistical and Financial Data for 1988-89, State of Alabama Department of Education, 1989 (Annual Report). Contact: Department of Education, Gordon Persons Building, Montgomery, Alabama 36130-3901.

Publication provides a state summary of information related to enrollment and funding. Publication provides data on students, personnel, and revenues/expenditures by school district. School district level data include: enrollment by grade, race and sex, average daily attendance and average daily membership by grade group, number of graduates, dropouts, fulltime equivalent personnel, salaries of teachers and principals, revenues by source of funds, and per pupil expenditures by function.

Arkansas

Annual Statistical Report of the Public Schools of Arkansas, Department of Education, Little Rock, Arkansas, 1990 (Annual Report). Contact: Department of Education, 4 State Capitol Mall, Little Rock, Arkansas, 72201-1071.

Report is a compilation of data, by school district, on thirty-two items relating to public schools. Data reported include: average daily attendance and percent change over five years, average daily membership, assessed valuation and millage rate, state and federal aid, expenditures, staff information, and average salaries.

Florida

Profiles of Florida School Districts 1990-91: Student and Staff Data, Florida Department of Education, 1991 (Annual Report). Contact: Management Information Services, Division of Public Schools, Florida Department of Education, Tallahassee, Florida 32399.

Report provides state, region, and county profiles of Florida's county-based school districts. Data include enrollment by grade, ethnic group and special programs, number of graduates, dropouts by grade, disciplinary actions, staff levels, salary levels for teachers and administrators, and community characteristics.

Profiles of Florida School Districts 1989-90: Financial Data, Florida Department of Education, 1991 (Annual Report). Contact: See previous citation.

Report provides state and county profiles of finances for Florida's county-based school districts. Data include revenues by source and program and expenditures by category and program.

Florida Education Finance Program 1989-90, Florida Department of Education, 1989 (Annual Report).

Report provides a summary/explanation of the various components of the Florida School Finance Program and indicates the funds allocated to each school district under each component of the formula.

Kentucky

Profiles of Kentucky Public Schools (Fiscal Year 1988-89), Office of Internal Administration. Kentucky Department of Education. (Annual Publication). Contact: Office of Internal Administration, Capital Plaza Tower, Frankfort, Kentucky 40601.

This publication presents data on seventeen factors related to quality of public schools. Data are presented by school district for the current year and state averages are presented for a twelve year period. Data include: expenditures, teachers by type of degree, graduation rates, attendance rates, costs by function, pupil/teacher ratios, college attendance rates, federal and state aid, and percent of deprived children.

Receipts and Expenditures (Fiscal Year 1988-89), Office of Internal Administration, Kentucky Department of Education (Annual Publication). Contact: See previous citation.

Provides data on receipts and expenditures for the state and for school districts for the 1988-89 fiscal year. Revenues are identified by source (federal-state-local) and expenditures are detailed according to twenty-three separate categories. For school districts, each expenditure category is reported as a total amount, as a percent of total expenditures, and as a per pupil amount.

Public School Financial Analysis (Fiscal Year 1988-89), Office of Internal Administration, Kentucky Department of Education (Annual Report). Contact: See previous citation.

Presents financial data for each school district for the fiscal years 1956-57 and 1985-86 through 1988-89. Presents data on assessed valuations, state revenues, and local revenues on a total and per pupil basis, and gives state ranking for each measure. A second section provides a listing of districts arranged in rank order for average daily attendance, assessed valuation (total and per pupil), state revenues and local revenues.

Local District Annual Financial Reports (Fiscal Year 1988-89), Office of Internal Administration, Kentucky Department of Education (Annual Report). Contact: See previous citation.

This publication presents a detailed breakdown of receipts and expenditures for school districts in the state. Data are taken from the Annual Financial Reports submitted by local districts to the State Department of Education.

Kentucky Mandated Testing Program (CTBBS-Fourth Edition Benchmark Version), Kentucky Department of Education, Spring 1989.

For each school district, data are provided similar to that of the profile data noted in a citation above. In addition, this report provides information on 1989 standardized achievement test scores by subject area for students in third, fifth, seventh and tenth grades. Summary data are presented for the state.

Louisiana

Louisiana Progress Profile 1989-90 (State Level Report), Office of Research and Development, Louisiana Department of Education, June 1991. (This is the first report published pursuant to education reform legislation). Contact: Louisiana Department of Education, P.O. Box 94064, Baton Rouge, Louisiana 70804-9064.

This report provides a state level summary of data compiled in school and district progress reports. Includes state averages for achievement test scores, enrollment statistics, and teacher qualifications. Also reports results of a 1990 public opinion survey regarding public attitudes and perceptions regarding public schools, and a final section describes the long range plan for improving the states public education system.

141st Annual Financial and Statistical Report (Session 1989-90), Bulletin 1472, Office of Research and Development, Bureau of Evaluation and Analytical Services, Louisiana Department of Education (Annual Report). Contact: See previous citation.

Provides general descriptive data for the state including revenues and expenditures, test scores, and staff. Publication then presents a profile of the state school system and one for each school district in the state. District profiles include: students by race and sex, public and non-public registration (actual and projected), number of graduates, number and type of schools, staff information, experience of teachers, revenues by source and expenditures by function.

Mississippi

Annual Report of the State Superintendent of Public Education 1989-90, State Department of Education, January 1991. (Annual Report). Contact: State Department of Education, P.O. Box 771, Jackson, Mississippi 39205.

Publication provides a state summary of data related to education including the number and type of schools, enrollment, dropout rates, staff information, and financial summaries. Data by school district include enrollment and attendance, salaries, and financial data. Financial data include: funds by source, revenues and expenditures, property assessments, and tax levies.

North Carolina

Statistical Profile North Carolina Public Schools 1991, North Carolina Department of Public Instruction. (Annual Publication). Contact: North Carolina Department of Public Instruction, Publications, 116 W. Edenton Street, Raleigh, NC, 27603-1712.

Publication provides a state summary of information related to students, personnel, finances, and transportation. In addition much of the information is reported for each school district in the state. Data by administrative unit include: average daily membership, students served by exceptional student programs, pupils in membership by race and sex, projections of number of graduates through the year 2000, dropout and retention, personnel experience and degree status, per pupil expenditures, expenditure rankings, county appropriations, transportation (buses, pupils, miles, and cost), intentions of graduates, personnel by source of funds and current expenditures by source of funds.

Report Card of the State School Systems in North Carolina 1991, North Carolina State Board of Education, January 1992. (Annual Publication). Contact: North Carolina Department of Public Instruction, Publications, 116 W. Edenton Street, Raleigh, NC, 27603-1712.

Publication presents data for each school system in the state in five separate sections. The first two sections focus on characteristics of the school district and community, two sections present data on various measures of student achievement, and a final section provides an evaluation of the school system relative to state accreditation standards. The 1991 publication is the second annual report on North Carolina schools. Data presented allows comparisons in achievements between school districts and within individual districts over time.

Oklahoma

Results 1990: Oklahoma Report, Book Three, Oklahoma State Department of Education, December 1990 (Annual Report). Contact: State Department of Education.

Publication presents reports for each school district in the state. Data include: student characteristics, achievement results, revenue, expenditure, teacher salaries, and teacher experience.

South Carolina

Educational Trends in South Carolina, Office of Research, Management Information Section, South Carolina Department of Education, June 1991. Contact: Office of Research, Management Information Section, Room 605, Rutledge Building, Columbia, SC 29201.

Initial sections of the publication presents summary data for the state on expenditures, enrollments, salaries, staff, transportation, and test results for Basic Skills Assessment, Cognitive Skills Assessment, and the Statewide Testing Program (grades 4, 5, 7, 9, and 11). District level data are presented for enrollment, millage rates, expenditures, salaries (teachers, principals, and superintendents), and results are presented for the achievement tests noted under the description of state data in the preceding sentence.

South Carolina Norm-Referenced Testing Program 1991 Report, Division of Policy, South Carolina Department of Education, August 1991 (Annual Report). Contact: See previous citation.

Presents state results for the South Carolina Norm-Referenced Testing Program. Program tested 225,683 students in grades 4, 5, 7, 9 and 11. Test used the Stanford Achievement Test, Eighth Edition (Stanford-8). Appendix A reports district Stanford-8 percentages above the 50th national percentile by grade for 1990 and 1991, and Appendix B reports district Stanford-8 percentages in each national quarter for 1990 and 1991.

Rankings of the Counties and School Districts of South Carolina 1989-1990, Office of Research, Management Information Section, South Carolina Department of Education, May 1991 (Annual Report). Contact: See previous citation.

This publication presents data for counties or school districts in the state. Major sections of the report address population, economics, pupils, professional staff, and finances. Most socioeconomic data are presented for counties while data relating specifically to schools are presented for each school district. Student data cover enrollments, numbers of graduates, and college attendance, staff data provide information on qualifications, and the finance section provides information on revenues and expenditures, salaries, tax rates and fiscal capacity. Most financial data are reported on a total and per pupil basis.

Tennessee

Annual Statistical Report of the Department of Education, Year ending June 30, 1989, State Department of Education Annual Report). Contact: State Department of Education.

Publication provides names and addresses for members of the State Board of Education and the name of the Superintendent and Chairman of the School Board for each school district in the state. In addition to state summaries of data, this report contains thirty-nine tables which report data on various aspects of school districts in the state. Data include statistics on enrollment, student progress, school personnel, transportation, and revenues and expenditures (by source and type of expenditure).

Texas

Snapshot 90: 1989-90 School District Profiles, Texas Education Agency, April 1991 (Annual Report). Contact: Department of Research and Development, Texas Education Agency, 1701 N. Congress Avenue, Austin, Texas 78701.

Publication provides summary statistics for the state on students, student performance, staff, and finances. Data on 91 items are provided for each school district in the state. Data for school districts include: enrollment, attendance, dropout rates, percent passing all tests, SAT and ACT scores, staff characteristics and salaries, teacher qualifications, taxes, revenues by source, and expenditures by type.

Virginia

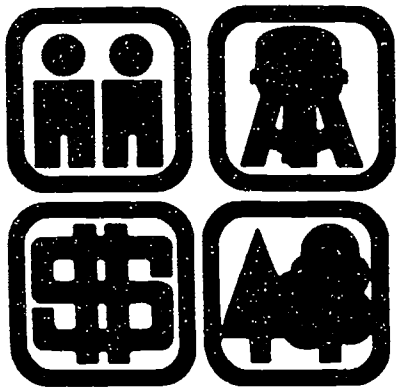
Facing Up-24: Statistical Data on Virginia's Public Schools, 1988-89 School Year. Division of Management Information Services, Department of Education, Commonwealth of Virginia, August 1990 (Annual Report). Contact: Department of Education, P.O. Box 6Q, Richmond, VA 23216-2060.

Publication provides 1988-89 data for each school district in the state. Data include: enrollment, pupil/teacher ratios, promotions for a three-year period, Virginia State Assessment Results (grades 1, 4, 8 and 11), graduation rates, graduates continuing education, fiscal capacity (property, income, and sales values), expenditures by source of support, state aid, per pupil expenditures by source, and capital outlay/debt service expenditures.

A New Vision for Education: Superintendent's Annual Report for Virginia 1989-90, Virginia Department of Education (Annual Report). Contact: See previous citation.

Publication provides data for each school district in the state in three major sections covering students, finances, and staff. Student data include: enrollment, pupil/teacher ratios, promotions, assessment results, and dropout statistics. Financial data include: receipts by source of funds, expenditures by type of service, distribution of state funds, expenditures by source of funds, and data on local ability to provide financial support. Staff data include: positions by type, and salaries.

The SRDC is one of four regional rural development centers in the nation. It coordinates cooperation between the Research (Experiment Station) and Extension (Cooperative Extension Service) staffs at land-grant institutions in the South to provide technical consultation, research, training, and evaluation services for rural development. For more information about SRDC activities and publications, write to the Director.



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