

# *Small Schools*



Photo by Ric MacDowell

*Why they provide the best  
education for low-income children*

*A Challenge West Virginia document  
written by Beth Spence*

*based on the research of Dr. Craig Howley and Dr. Robert Bickel  
2000*

## ***About the researchers:***

The information in this publication is based on the work of Dr. Craig Howley and Dr. Robert Bickel.

**Craig B. Howley, Ed.D.**, is associate adjunct professor at Ohio University, Athens, Ohio. He was the director of the ERIC Clearinghouse on Rural Education and Small Schools in Charleston, WV, from 1992-1998. From 1991 to the present, he has been a senior researcher and evaluation specialist for Appalachia Educational Laboratory in Charleston.

Dr. Howley received his BA in English and Comparative Literature from Columbia College, New York City, in June 1970. His Master's Degree in Gifted Education, August 1982, is from West Virginia Graduate College, South Charleston, West Virginia. The Ed.D. in Education Administration was conferred by West Virginia University, Morgantown, West Virginia, in May 1996.

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Dr. Bickel received his BA in sociology from Pennsylvania State University in March 1971 and his Master's Degree in sociology from the same institution in December 1972. His Ph.D. in Educational Foundations and Policy Studies was conferred by Florida State University in May 1987.

Dr. Bickel's publications include more than 31 journal articles and numerous book chapters and presented papers. He can be reached at 238 Jenkins Hall, Marshall University, 400 Hal Greer Boulevard, Huntington, WV 25755-2440. Phone: 304-696-2867. E-mail: [ded027@marshall.wvnet.edu](mailto:ded027@marshall.wvnet.edu).

**For more information about the positive aspects of small schools, please visit the following websites:**

The Rural School and Community Trust at [www.ruraledu.org](http://www.ruraledu.org)

Challenge West Virginia at [www.wvcovenanthouse.org/challengewv/](http://www.wvcovenanthouse.org/challengewv/)

Craig Howley's website at [http://oak.cats.ohiou.edu/~howleyc/prev\\_res.html](http://oak.cats.ohiou.edu/~howleyc/prev_res.html)

The Appalachia Educational Laboratory at <http://www.ael.org/>

# The Rich get Richer

*For whosoever hath, to him shall be given, and he shall have more abundance: but whosoever hath not, from him shall be taken away even that he hath. (Matthew 13:12)*

Dr. Craig Howley of Ohio University and the Appalachia Educational Laboratory cares deeply about the education of children – especially low-income children, the kids who often are left out when education policy decisions are made.

That’s why he set out to learn about the effect of school size on children. His research is known as the Matthew Project. The name is taken from the verse of Matthew, above, commonly referred to as “the rich get richer and the poor get poorer.”

Dr. Howley used the biblical reference to illustrate how education systems function to advance the position of the wealthy and powerful, while putting a ceiling on the aspirations of children from low socioeconomic families.



The first time he conducted his research on school size, Dr. Howley used 1990 data from West Virginia, where 30 percent of all children now live in poverty. Working with Dr. Robert Bickel of Marshall University, he has since replicated the study in Georgia, Ohio, Texas and Montana. The results are the same: **small schools and small school systems offer low-income students the best opportunity to achieve.**

Gov. Gaston Caperton started West Virginia on a school consolidation movement in the late 1980s that resulted in the closure of more than a fourth of all public schools. Most of those schools were in the state’s poorest communities, attended by children from the lowest socioeconomic levels. Unfortunately, the state pressure on counties to build larger and larger schools for smaller and smaller children continues to this day.

“The findings developed in this study provide strong evidence that small school size benefits the achievement of impoverished West Virginia students,” Dr. Howley concluded. “The evidence suggests, as well, that increasing school size may produce effects that are the opposite of those that policymakers claim they intend in closing smaller schools.”

In other words, people like former State Schools Superintendent Hank Marockie, who argue that they are closing schools to provide students with a better education, are blowing smoke. There simply isn’t any evidence to back them up.

Dr. Howley and Dr. Bickel have given us the research data that supports what we know in our hearts to be true: small schools are absolutely necessary if we want our most fragile students to succeed. They’re a good, safe choice for our other kids as well.

# The West Virginia results

*“Consolidation was the rigorous action chosen to demonstrate the will of the state.”*

– Dr. Craig Howley

In his original West Virginia research, Dr. Howley tested the results of a 1988 California study which found that socioeconomic status systematically influences the effects of school and district size on student achievement. The study found that small schools and small school districts benefit low-income students much more than large schools benefit affluent students. Further, the study found that large schools compound the negative effects of poverty, but small schools reduce the effects of poverty.

Dr. Howley constructed a formula using socioeconomic status (based on free and reduced school meal figures), size of school and district, student achievement scores and other variables to show the effect of size and socioeconomic status on student achievement.

The results for West Virginia were even more striking than those for California. Dr. Howley found that, as in California, large schools benefit affluent students but cause problems for low-income students. The study also showed that the negative effects of large schools are much stronger for low-income children than the positive effects for affluent children.



But the West Virginia study also showed that *small schools disrupt the negative relationship between poverty and school performance.*

The study tested this possibility by looking at the achievement of grade 6 and grade 11 students attending larger as compared to smaller schools. At both grade levels, the larger schools served more affluent communities and the smaller schools served less affluent communities (i.e., they were poorer, with subsidized meals rates 50 percent and 100 percent higher, respectively, at grades 6 and 11, than in the larger schools.) The overall achievement levels were the same. The kids in the smaller and poorer schools were doing as well as the kids in the larger and more affluent schools.

“Correlations between poverty and achievement were much weaker in smaller as compared to larger schools, about one-sixth what they were in larger schools,” Dr. Howley said. “Small schools blunt the effects of poverty by as much as 80 percent.”

Dr. Howley’s study was conducted using data collected just before the state began the massive consolidation efforts that led to the closure of more than a fourth of all public schools.

He found that large schools are much more harmful to impoverished students than they are beneficial to more affluent students. In fact, he found the magnitude of negative effects of large size among impoverished students is twice the magnitude of positive effects among affluent schools and districts. He further found that as the grade levels increase, the magnitude of the effects of size on achievement increases.

In large schools, socioeconomic status accounted for about 25 percent of the variation in achievement test scores, while in small schools socioeconomic status accounted for only one to

four percent of the variance.

“Mean achievement scores were nearly identical, but the smaller schools were much poorer, with subsidized meal rates 50 to 100 percent higher than in the large school groups,” Dr. Howley wrote. “The expectation that the correlation of achievement and SES would be substantially lower in small than in large schools proved accurate.”

Dr. Howley said when Gov. Gaston Caperton took office in 1989, the state faced a serious and genuine financial management crisis. Because education spending constitutes about half the state budget, education became a target for tightening up spending.

“It was argued that improved efficiency would save the state money and also facilitate education reform,” Dr. Howley wrote. He pointed out a flaw in the reasoning of government and business interests in West Virginia. “When you look, as government and business people did in WV, the small schools serving poor kids did not on the surface appear to be ‘high flyers.’ As we all know, those places serve the affluent. Want to find a school where aggregate achievement is in the 90th percentile? Try the rich! So when very poor kids turn in 50th percentiles in a small school, it looks like it’s not a big deal. Wrong. The West Virginia and California findings suggest it is in fact a significant, if largely unnoticed, accomplishment.”

“Consolidation was a mainstay of the plans to improve educational efficiency. Teachers needed raises as well, and ... consolidation could provide the opportunity to reallocate wages through reductions-in-force. Consolidation was, in the end, the rigorous action chosen to demonstrate the will of the state and the new administration.”

The mechanism for accomplishing the consolidation was the School Building Authority. “Local districts were to receive funds, however, only if their comprehensive facilities plans met arbitrary economy of scale standards invoked by the SBA,” Dr. Howley wrote. “And it was the SBA itself that issued applicable guidelines and made all the funding decisions, largely in closed meetings. SBA staff and members described their work as “a mission.”

Across the state, small schools were closed. The schools that remained open in 1994 were about twice the size of those that closed, Dr. Howley found. He also found that the schools that were closed had served less affluent communities.

“The analysis of 1990 data clearly indicated that impoverished students in small schools were being served well. Further, the literature review showed that a research basis existed that ought to have served as a caution to policymakers, who were avowedly concerned to improve test scores,” Dr. Howley said. “Indeed the research had been shared with key state officials.”

Dr. Howley thus concludes that the motive for consolidation “actually had little to do with education and much more to do with high-level public administration generally.”

“If small schools were a new cancer-fighting drug, the inventor would be rich and famous,” he said. “Instead, West Virginia – and many other states – continue to declare that small schools are inefficient, inadequate and too expensive.”



# The Cumulative Effect

*“Size effects related to socioeconomic status may be cumulative.”*

– Dr. Craig Howley

Dr. Howley’s research suggests a widening achievement gap between disadvantaged and advantaged students over the course of 13 years of public schooling. In other words, the rich get further ahead, while the poor fall further and further behind.

A community leader in Lincoln County didn’t have access to Dr. Howley’s study, but he reached the same conclusions.

“I think the little kid . . . looks at himself as an equal and so they all try about the same,” he said. “Somewhere along the line, as they grow up, the kids begin to see the difference. The kids here in third grade are well above the national average in basic skills scores. They’re hanging in there at the sixth grade level. By ninth grade level, they’ve started downhill and in eleventh grade, it’s over.”

The effect of socioeconomic status on children’s achievement has been highlighted in other research. A 1995 study by the West Virginia Education Fund, which compared 33 high-achieving elementary schools with 33 low-achieving elementaries, showed the lowest achieving schools had 2.5 times more students receiving free and reduced school meals.



Kenna Seal, a former county superintendent who now directs the State Board of Audits, said succinctly, “The single most powerful predictor of school achievement is socioeconomic status.”

Dr. Howley agrees. “The direct association of size and achievement is neither practically nor statistically significant,” he said, “but, instead, socioeconomic status governs the relationship.”

He found that across all grade levels, the overall effect of size is nearly zero. “Only when the effects are assessed at differing levels of socioeconomic status do the strong disparities in the effects of size manifest themselves.” Simply

stated, size isn’t a significant factor until you consider the socioeconomic level of students.

When Dr. Howley compared different levels of socioeconomic status, the size issue became an extremely important factor. Data he extrapolated from a complex mathematics formula demonstrates that small schools tend to disrupt the negative influence of socioeconomic status on the achievement of impoverished students.

“At the eleventh grade level, the largest positive effect sizes are plus .92 and plus 1.20 versus the largest negative effect sizes of  $-2.33$  and  $-3.29$ . In general the negative extremes are about two or three times the magnitude of the positive effects.”

What this means is that the mega-schools built throughout the 1990s probably are putting West Virginia’s most at-risk children in even greater peril. As attorney Franklin Cleckley argued in a case involving schools in Pendleton County, “Arbitrary school size requirements invidiously discriminate against rural children, preventing their equal access to school facilities and thus to educational opportunity. The majority of West Virginia’s rural children are also poor, increasing their educational need and making the denial of access to schools doubly destructive.”

# Who are these children?

*Epecially it is the duty of the state to educate the children of the poor man.*

*–William R. White, first Superintendent of Schools in West Virginia*

West Virginia's children, and with them, the state's future, are in serious trouble, according to two separate studies that measure the well-being of our youngest citizens.

A 2000 study conducted by the Rural School and Community Trust cited West Virginia as one of ten states whose rural schools need urgent policy attention. According to the study, the state has the second highest percentage of students attending rural schools. Half of West Virginia's public schools are rural, but only 13 percent of the students attend these schools, the study found.

More than a quarter of West Virginia's rural students live in poverty and nearly half qualify for free school meals. The state ranks fifth in the percentage of students who are eligible for free lunches, sixth in the percentage of rural householders with less than 12 years of education and fifth in the percentage of rural teachers teaching out-of-field.

Kids Count, the national organization that issues a yearly statistical report on child well-being, weighed ten different indicators in its 2000 national report. West Virginia's children tumbled from 30<sup>th</sup> place among states in 1990 to 44<sup>th</sup> in 1997. Kids Count found that thirty percent of West Virginia's children live below the official poverty line. That's almost double the number living in poverty in 1980 and an increase of 15 percent since 1990. Thirty-eight percent of West Virginia's children live with parents who don't have full-time, year-round employment. This is the worst rate in America.

The United States Census Bureau estimates that 37.5 percent of all West Virginians under the age of five live in poverty.

In 1998, one out of every two West Virginia children received free and reduced-price school meals, an increase of almost twenty percent over 1990, according to West Virginia Kids Count.

Kids Count maintains that connectedness is a crucial component for at-risk families. Families need to be connected to economic opportunity and to strong social networks. The local school, for instance, provides an opportunity for connection for parents who lack transportation, jobs and status.

And yet, Kids Count reports, many low-income parents “feel that they have neither the opportunity nor the power to influence the quality of their children's education or the trajectory of a school's performance.” In West Virginia, many of those powerless and marginalized parents have seen their community schools closed and their children bused to faraway schools.

“Fully one-quarter of America's school-age children attend public schools in rural areas or small towns,” said Marty Strange, policy director for the Rural School and Community Trust, “but if you listen to the education policy debate, chances are you will not hear much about them. Every child, including every rural child, is important. No child deserves to be lost in the shuffle.”

The challenge for West Virginia is not a lot different from that facing William R. White, the Methodist-Episcopal minister who became the state's first Superintendent of Free Schools in 1864.

In 1865, Mr. White submitted a dismal report to the Legislature about shortages of supplies, school buildings in ruins, local school commissioners who were ignorant, indifferent and not always honest; he told of citizens who didn't want to see the children of the poor uplifted by education.

“The people must be educated up to that point where they shall see the great advantage of being taxed to build school houses and properly remunerate the teachers of their children,” he wrote. “Epecially it is the duty of the state to educate the children of the poor man.”

# Other studies

*As schools become larger, the negative effect of poverty on student achievement increases.*

– *Small Works*

New research in Georgia, Montana, Ohio and Texas echoes the findings of Dr. Craig Howley in West Virginia – smaller schools reduce the harmful effects of poverty on student achievement.

The research, conducted by Dr. Howley and Dr. Robert Bickel of Marshall University and commissioned by the Rural School and Community Trust, concludes that small schools narrow the academic achievement gap (as measured by state-sanctioned standardized tests) between students from less affluent communities and their counterparts from wealthier communities.

*Small Works*, a publication of The Rural School and Community Trust, describes how the research was conducted. The researchers measured the relationship of school performance on standardized tests to the level of poverty in the school and district, the school and district enrollment size, and the interaction between those two factors.

They looked for two kinds of effects: the excellence effect of school size and the equity effect.

To determine the excellence effect, they posed the question: Does a school or school district's size influence its students' performance differently depending on the level of poverty in the students' community? They used regression analysis to indicate how achievement scores change as school size changes in communities of differing poverty levels.

To determine the equity effect, they asked how much of the variance in average test scores could be attributed to differing levels of poverty. The key question posed: *is poverty's power over student achievement greater in smaller or larger schools?*

The poverty level was measured by the percentage of students who qualify for free or reduced-price school meals. The school size was measured by the average number of students per school grade. The study set no absolute standard for large or small schools. Researchers considered school size in relative terms, comparing the performance of larger and smaller schools in communities with greater or lesser levels of poverty.





**These are the findings reported in *Small Works*:**

In Georgia, Ohio and Texas, researchers found strong evidence that students in less affluent communities perform better when they attend small schools. The lower the income in the community, the more student achievement is benefited by smaller schools. The lower the income of the community served by the schools, the more achievement sags in larger schools and surges in smaller schools. In Montana, a state that maintains many small schools and few large ones, this “excellence” effect of small schools was evident, but not as strong.

**These are the state-by-state excellence effects:**

**Georgia:** As school size increases, the average achievement score in schools serving children from poorer communities falls on 27 of 29 test scores.

**Ohio:** In all grade levels, both smaller schools and smaller districts are associated with higher achievement in poorer communities.

**Texas:** As school size increases, the average achievement score in schools serving children from poorer communities falls on eight of ten test scores.

**Montana:** There is strong evidence that smaller schools outperform larger schools at all levels of community poverty, despite serving poorer communities in general.



**These are the state-by-state equity effects:**

**Georgia:** In all grades and on all 29 standardized tests, poverty’s power rating is substantially lower in smaller schools than in larger schools. In larger schools, poverty’s power rating ranged from 49 to 79 percent. In smaller schools, the rating ranged from 18 to 53 percent.

**Ohio:** In all grades, poverty’s power rating is substantially lower in smaller schools than in larger ones. In larger schools, poverty’s power rating ranged from 41 to 59 percent. In smaller schools the range was from 27 to 33 percent.

**Texas:** In all grades and in all subject areas tested, poverty’s power rating is substantially lower in smaller schools than in large ones. In larger schools, poverty’s power rating ranged from at least 30 percent to as high as 62 percent. In smaller schools the range was as low as three to no higher than 31 percent.

**Montana:** In early and middle schools, poverty’s power rating in larger schools was four times greater than it was in small schools.

## Conclusions

The researchers found that as schools become larger, the negative effect of poverty on student achievement increases. The less affluent the community, the smaller a school should be to maximize the school's performance as measured by standardized tests.

The well-documented correlation between poverty and low achievement is as much as ten times stronger in larger schools than in smaller ones in all four states.

This impressive result was found consistently in 48 of 49 comparisons between smaller and larger schools.

## Implications

If a state's policy goal is improving student achievement as measured by standardized tests and narrowing the achievement gap between children from the most affluent and the least affluent communities, then states should consider adopting policies favoring smaller schools, especially in the least affluent communities.

States concerned about reinvesting in deteriorating school facilities should not be eager to increase school size in most instances, if higher student achievement, especially in poorer communities, is a goal.



# The Human Cost

*“After the school was taken out, you could tell a big difference. Then we were a community that got together. Now we’re just people who live along the same road.”*

*– Lincoln County resident*

Some of West Virginia’s smallest residents often pay an extremely high price for decisions made in urban centers far from the winding back roads where the children live and go to school.

Students who testified at public hearings sponsored by Challenge WV in the fall of 1999 described in excruciating and painful detail the long bus rides that left them so tired they weren’t able to take the advanced classes that were to be their reward. They talked about loss of family time and the inability to participate in extracurricular activities, about the hours of their lives wasted on buses.



Dr. Howley says the factors cited by parents fighting to keep community schools *really are* the factors that make small schools better for low-income children. “Increased school size has negative effects upon students participation, satisfaction and attendance, and adversely affects the school climate and a student’s ability to identify with the school and its activities,” he said.

A teacher who spent much of her career in a small elementary school said, “In a small community, everyone is related to everyone else. Kinship goes a long way toward eliminating a lot of socioeconomic and class issues.”

A principal who oversaw the closing of two small elementary schools said she felt like she was losing family members when the schools closed. “The parents worked well together and the teachers did,” she said. “It was just like a family working together – a village raising children.”

Another teacher commented, “Any time you consolidate, parents get left out because they quit coming to PTA and they lose interest in the school because it’s so far away and they feel powerless. Poor people get hit hardest by consolidation. They lose their voice.”

Former Calhoun County school board member Deirdre Purdy told the story of tiny Nebo School in Clay County, where, despite the poverty of the community, 100 percent of parents participated in PTA and raised approximately \$7,000 each year to support the school. When Nebo was closed, only two parents continued their involvement with the school where their kids were sent.

“To urban administrators, moving a school ten or fifteen miles down the road may seem a minor adjustment on the state map,” said Purdy. “Poor parents with worn-out cars, welfare mothers with more kids at home, grandparents and proud neighbors can get to the community school for the talent show or the kindergarten graduation, but they cannot get ten or fifteen miles down winding two-lane roads or over mountains. Parental and community involvement in the schools drops precipitously.”

A Lincoln County parent whose community school was closed put it this way, “Everything was centered around the school. After the school was taken out, you could tell a big difference. Then we were a community that got together. Now we’re just people who live along the same road. We don’t even see each other much.”

# Challenge West Virginia

Challenge West Virginia is a statewide organization committed to maintaining and improving small community schools and reforming education policy in West Virginia so that all of our state's children have the opportunity to receive a first-class education and the promise of a bright future.

The latest research indicates that children – especially low-income, at-risk children – have greater success in small, community-based schools.

Unfortunately, boards of education across West Virginia have closed more than a quarter of our state's public schools during the past ten years. More than anything else, education policy has been guided by "economies of scale," a concept borrowed from industry, which has meant putting the maximum number of students in the minimum number of schools with the minimum number of teachers. What this has meant in practical terms is the loss of our state's smallest schools, a majority of which were located in its poorest communities.



Challenge members are convinced that changing public policy, keeping our community schools and helping parents become full partners in the education system are necessary if we are to realize a future where our children believe in themselves, value their communities and receive the best possible education.

Challenge WV is a program of Covenant House, an independent, non-profit organization in Charleston, WV.

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