

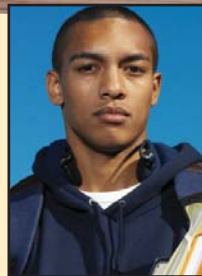
# Is one of your schools on a track for closure?



Elementary



Junior  
High



High  
School

*A three-part  
series on  
school closure  
in Illinois*

by Joe Pacha,  
Sherrilyn Billger,  
Frank Beck and  
Norm Durflinger

*The* ILLINOIS SCHOOL BOARD  
**JOURNAL**

# Is one of your schools on a track for closure?

by Joe Pacha, Sherrilyn Billger, Frank Beck and Norm Durlinger

In the 1940's, Illinois had more than 11,000 school districts, most of which were one-room schools. Since then, district consolidations and school closures have whittled the number to 866, as of July 1, 2010.

Little research exists about the predictors and outcomes of school closure. Research attempting to do so used only part of the meas-

ures for a limited time. If in-depth analyses of the causes and consequences of school closure have been studied, it has been on a case-by-case basis.

As Illinois State University researchers, we worked together three years gathering data from 1972 to 2005 for a study of Illinois school closure to answer the following questions:

- What are the demographic, economic and educational causes of school closure?
- What trends lead up to a closure decision and which are most important?
- What are the demographic, economic and educational impacts resulting from school closure? Are these effects immediate or do they manifest over time?
- Under what circumstances does the closure of a school bring about demographic, economic and educational benefits for a county, district or community?

We wanted to understand the relative size and importance of these forces, expecting that multiple factors are important and at work in these cases. We also wanted to understand the issues in order to help school boards and administrators better understand what is involved as they make difficult decisions concerning their schools.

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## Closure project

When researchers from Illinois State University approached The Illinois School Board Journal last spring regarding a series on the factors that influence school closure, we realized that the material being presented was going to demand special treatment in the magazine.

This three-part series, which ran in the September/October 2010, November/December 2010 and January/February 2011 issues of The Illinois School Board Journal, is now combined here as a package.

We believe that our analysis confirms that school closure is *not* tied to the two most often cited issues — money and enrollment. Other issues and factors come into play in the decision making process and are important for both legislators and school leaders to understand.

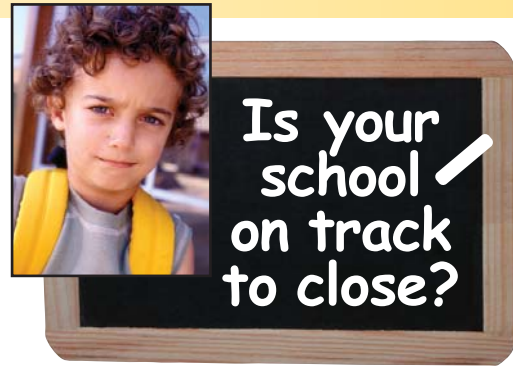
# Elementary predictors over time

Graphs 1-4 on page 4 represent the significant predictors of school closure over time for elementary schools: the education fund; per pupil operating expenditures; enrollment; and equalized assessed valuation. These graphs represent a 10-year history of each of these four variables just prior to the closure of schools. It is important to remember that this is an aggregate of all the closed schools. The bottom line of the graph represents “time” and starts at 10 years and ends with closure at zero.

So what do these charts tell us about closing or not closing schools?

Graph 1, the education fund, shows a steady increase over the 10 years prior to school closure. An interesting phenomenon happens about two years before closure: the education fund falls. This should be predictable since there is a similar leveling in the EAV (shown in Graph 4), which would also cause stagnation in the ability of the school to raise funds. Couple this graph with Graph 3, enrollment, and it becomes apparent that with declining enrollment that the gap between the needs (students) and the resources (per pupil operating expenses) widens to a point where the community is unable to provide the support needed.

Graph 2, per-pupil operating expenditures, shows a steady increase throughout the 10-year period. What is striking is that as the enrollment falls, the cost to operate the school continues to increase at a steady rate, demonstrating a major factor in school closure. Additionally, the education fund and the operating cost per pupil of closed schools were still lower than that of the schools that remained open.



Graph 3, school enrollment, is very telling and demonstrates why this is one of the main predictors of school closure. When declining enrollment is combined with increased operating expenditures per pupil and increased education fund expenditures, the formula for school closure is high. Conversely, when enrollment increases, operating expenditures per pupil decrease and the education fund stabilizes, so the health of the elementary school is solid.

Graph 4, equalized assessed valuation (EAV), demonstrates an average increase of about \$12,000 per student over the 10-year period before school closure. When compared to schools that remained open, this amount is significantly *lower* and is highly connected to the inability of the school to raise funds in the same manner as the open schools.

## **Additional predictors**

Not all the predictors can be shown over time, so to what degree do they affect the closure overall? The analysis of the data suggests 25 variable predictors as shown in Table 1 and Table 2 on page 5. These tables provide a quick look at the predictors and their values to help understand their relationship to school closure.

Table 1 addresses “education/ school” predic-

tors; Table 2 addresses “community” predictors.

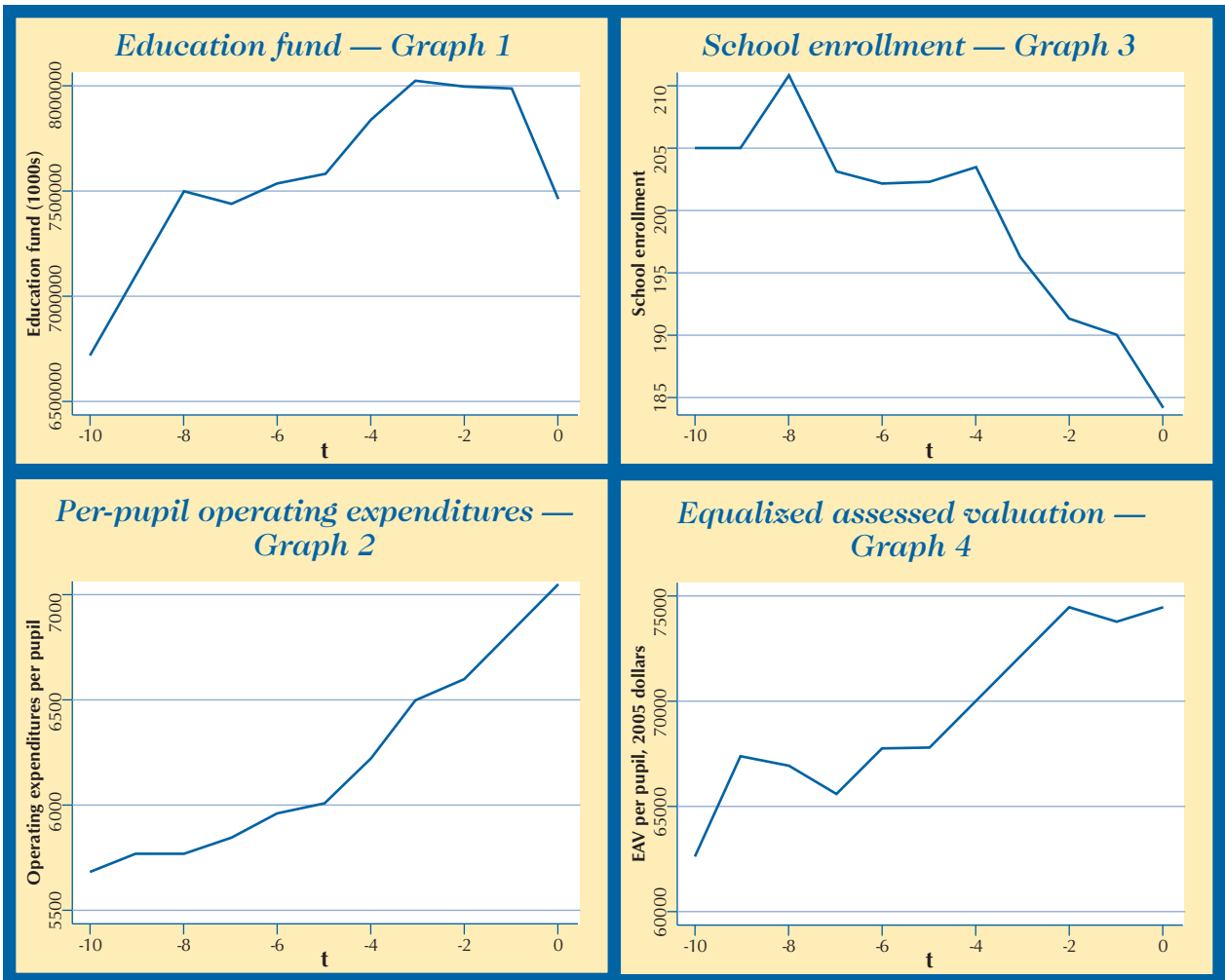
To read the tables, use the following formula: “Increasing (insert the variable name) (insert the column designation) the likelihood of closure.” The first variable would read: “Increasing enrollment significantly decreases the likelihood of closure.”

Individually, what do these variables mean and how can we better understand them in the context of the whole?

First, several variables do not influence school closure whether they increase or decrease. These variables have been designated on the tables as “neutral.”

Three variables *increase* the likelihood of school closure: EAV per pupil; teacher experience; and percent of students not meeting math goals.

- **An increase in EAV per pupil will significantly *increase* the likelihood of school closure.** For every increase of \$100,000 of EAV per pupil, the probability of school closure increased by 1.8 percent.
- **An increase in teacher experience *increases* the likelihood of school closure.** Having teachers with less experience is a double edged sword: it is good for the budget but not necessarily good for student learning.
- **An increase in students not meeting math goals *increases* the likelihood of school closure.** Every parent and taxpayer wants their school to perform well and to have students attain the goals established for them. Not meeting academic goals increases the likelihood of closure in elementary schools.



**What will help?**

But what variables actually help decrease the likelihood of an elementary school closing? If known, school districts could potentially do something about these variables in order to decrease the likelihood of closure.

Those nine variables are: enrollment; expenditures per pupil; elementary-only district; pupil/teacher ratio; percent exceeding in reading goals; poverty rate; being in an urban area; percent of immigrants; and percent of workers in agriculture. Looking at each individually:

- **Increasing enrollment will significantly decrease the likelihood of closure.** When enrollment is increased by 1 percent, there is a 10 percent lowering of the likelihood that the school will close. That is significant and makes common sense, but what is most important is the *power* of this variable.
- **Another significant predictor was the type of district.** If a school is in an elementary-only district, it is 5 percent less likely that it will close than if it is in a unit district.
- **Increasing expenditures per pupil will significantly decrease the likelihood of closure.** Higher expenditures per pupil are not usually desired by taxpayers. However, even while the closed schools' graph exhibited higher expenditures per pupil, the closed schools were still lower than their open school counterparts.
- **Increasing poverty rate significantly decreases the likelihood of closure.** Increased poverty rates are not usually welcomed by schools; however, more poverty students mean funds from both the state and the federal levels.
- **Increasing the pupil/teacher ratio decreases the likelihood of closure.** A higher pupil/teacher ratio would mean fewer staff needed for more stu-

dents; however, this may be hard to achieve in small schools with small numbers at each grade level.

- **Increasing the percent of students who exceed in reading goals decreases the likelihood of closure.** Increasing the percent exceeding in reading goals would be a worthy goal for all schools. If a school can increase its test scores, it's more likely to remain open!
- **The more urban the area the likelihood of**

**Table 1 – School Predictors of School Closure**

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Enrollment	Significantly Decreases		
EAV per pupil			Significantly Increases
Expenditures per pupil	Significantly Decreases		
Education fund		Neutral	
Teacher salaries		Neutral	
District tax rate		Neutral	
Elementary-only district	Significantly Decreases		
Percent low income		Neutral	
Percent Latino		Neutral	
Percent African American		Neutral	
Teacher experience			Increases
Pupil teacher ratio	Decreases		
Percent does NOT meet math goals			Increases
Percent exceeds math goals		Neutral	
Percent does NOT meet reading goals		Neutral	
Percent exceeds reading goals	Decreases		

**Table 2 – Community Predictors of School Closure**

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Poverty rate	Significantly Decreases		
Urban, 2500 – 1 million persons	Significantly Decreases		
Median household income		Neutral	
Median house value		Neutral	
Vacancy rate		Neutral	
Unemployment rate		Neutral	
Tax cap county		Neutral	
Percent immigrant	Decreases		
Percent in agriculture	Decreases		

**closure decreases.** Being rural increases the likelihood of closure and the more rural a school is, the more likely it will close.

- **Increasing the percent of immigrants in the community decreases the likelihood of closure and is a way to keep the school open.** More research will need to be done to determine the factor of this variable.
- **Increasing the percent of agricultural workers decreases the likelihood of closure and is also a way to keep the school open.** Perhaps the stability factor of farmers and those attached to agriculture may be at play here.

### **What does it mean?**

What conclusions can be drawn from this? Breaking them into three parts will make it easier to better understand the overall ramifications.

First, when comparing closed and open elementary schools without taking into account other similarities or differences, the following are important:

- Schools that remained open tended to have a higher percentage of students exceeding in math and reading than those that closed.
- Schools that closed were in more rural places and in unit districts.
- Schools that remained open had higher EAV, enrollment, expenditures per pupil and pupil/teacher ratios.

Second, when looking at closed elementary schools alone, the following findings are important:

- A downward trend in enrollment precedes closure by four to eight years.
- A downward trend in the education fund seems to precede closure by two to five years.
- A pronounced upward trend in per-pupil operating expenditures precedes closure decisions.
- EAV continues to increase before closure, but

this relationship is less clear and needs more research.

Third, when comparing open and closed elementary schools that are similar on all other characteristics, the findings are:

- Larger enrollments have a significant negative effect on the likelihood of school closure.
- Larger expenditures per pupil decrease the probability of closure.
- Test scores, especially in reading, are important in the decision making to close.
- The economic health of communities (e.g., household income, median home values, vacancies and unemployment) are not strongly related to the probability of closure.
- Larger immigrant populations in communities are linked to lower closure probabilities.
- The greatest school level predictors of closure are fiscal characteristics of the district and enrollment.
- When all school and community level effects are compared within levels of "ruralness," consistently, schools in the smallest and most isolated of rural counties (i.e., counties with no single community larger than 2,500 residents) have the highest probability of closure. This is compared to schools in other rural counties with larger communities all the way up to and including schools in metropolitan counties.

When school board members and administrators compare the above findings to their own school(s), they may find one or two of the characteristics of a school that closed. Does that mean their school is doomed to close as well?

Probably not. Careful analysis of *all* of the predictors must be made, not just one or two. However, one or two factors can be a warning sign of things to come. Taking a careful look at all of the factors together can help give school leaders the answers they need and show them where to concentrate their efforts.

# Junior high predictors over time

Graphs 5-8 on page 8 represent the significant predictors of junior high school closure over time: the education fund; per pupil operating expenditures; enrollment; and equalized assessed valuation (EAV). These graphs represent a 10-year history of each of these four variables just prior to the closure of junior high schools. It is important to remember that this is an aggregate of all the closed schools. The bottom line of the graph represents “time” and starts at 10 years and ends with closure at zero.

So what do these charts mean? What do they tell us about closing or not closing schools?

Graph 5, the education fund, shows a steady decrease over the nine years prior to the time of the school closure. This is predictable since there is a similar decline in the EAV shown in Graph 8, and that would also cause a decline in the ability of the school to raise funds. Couple this with Graph 7, enrollment, and it becomes apparent that declining enrollment and an inability to raise funds to make the school function widens to a point where the community is unable to provide the support needed.

Graph 6, per pupil operating expenditures, shows a steady increase throughout the 10-year period. What is striking is that as the enrollment falls, the cost to operate the school continues to increase at a steady rate. This gap between enrollment and costs to operate demonstrates one of the major factors in school closure.

Graph 7, school enrollment, is very telling and demonstrates why this is one of the main predictors of school closure. When declining enrollment is combined with increasing operating expenditures per pupil and decreasing education



fund expenditures, the formula for school closure is high. Conversely, when enrollment increases, operating expenditures per pupil decrease and the education fund stabilizes, so the health of the junior high becomes more stable.

Graph 8, EAV, demonstrates a radically changing value that ends up lower over the 10-year period before school closure. When compared to schools that remained open, this amount is significantly lower and is highly connected to the inability of the school to raise funds in the same manner as the open schools.

## ***Additional predictors***

Not all predictors can be shown over time and to the degree that they affect the closure overall. Analysis of the data suggests 27 predictors shown in Table 3 and Table 4 on page 9. These tables provide an overview of the predictors and their values in helping understand their relationship to junior high school closure.

Table 3 addresses the “educational/school” predictors of closure. The second addresses “community” predictors.

To read the tables, use the following formula: “Increasing (insert the variable name) (insert the

column designation) the likelihood of closure.” The first variable would read: “Increasing enrollment is neutral (has no affect) toward the likelihood of closure” and the third variable would read, “Increasing expenditures per pupil decreases the likelihood of school closure.”

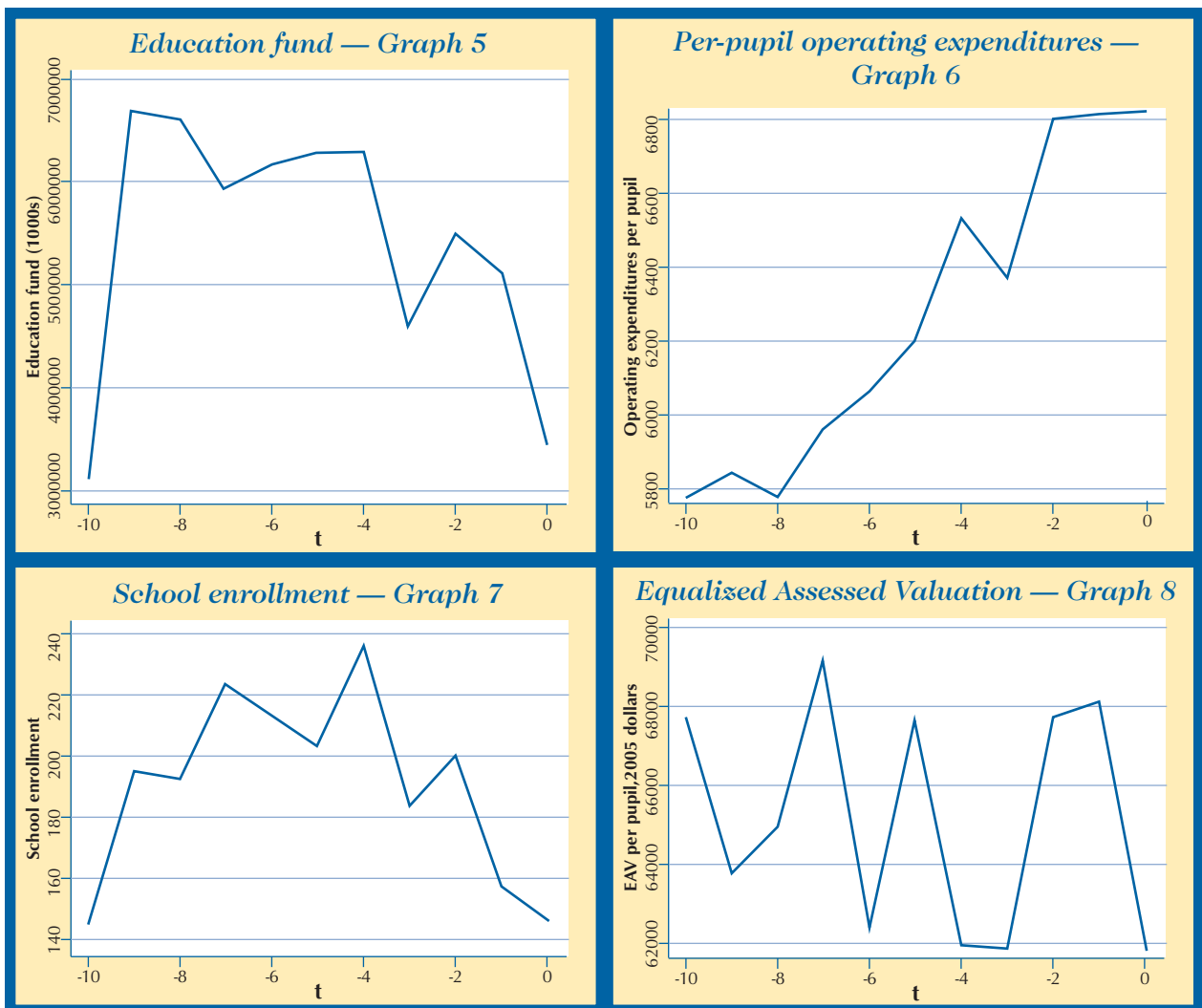
Let’s look at each of these variables to see what they mean and to better understand them in the context of the whole.

First, several variables have no influence on junior high closure whether they increase or decrease. These variables have been designated on the tables as “neutral.”

Five variables *increase* the likelihood of closure: percent of African American students; poverty rate; vacancy rate; percent involved

with agriculture; percent with high school diplomas; and percent of residents with graduate degrees.

- **An increase in the percent of African American students significantly increases the likelihood of school closure.** To understand why an increase in the percentage of African American students in the building is a *strong* factor in the likelihood of junior high school closure is a phenomenon that definitely deserves more study. Statistics alone do not help us understand the reasons behind the data. This cannot be equated with an increase in the total number of students, which decreases the likelihood of closure in an elementary school but is neutral at this level. This was a neutral factor at



the elementary level.

- **An increase in the poverty rate increases the likelihood of school closure.** Increases in the poverty rate in a school signals several factors that are hard for schools to overcome and often require extra resources: students who are in more need of extra help, students who have less resources to draw on and students who have fewer “life experiences.” Making up for these factors requires additional resources from the school. However, this is in direct contradiction with the findings for elementary schools, which showed a decrease in the likelihood of closure with an increase in the poverty rate.
- **An increase in the community home vacancy rate increases the likelihood of school closure.** The fewer people living in a community directly relates to other factors that play on school closure. Vacancy rate is a community measure that indicates the vitality of the community. While the vacancy rate was neutral for elementary schools, at the middle school/junior high level, it is a more significant factor.
- **An increase in the percentage of workers in agriculture increases the likelihood of school closure.** While this variable reacts oppositely for elementary schools, it needs more study to understand why this variable would react this way. While we speculated that community stability might play into this factor at the elementary level, it plays the opposite at the middle school/junior high level.
- **An increase in the population with high school diplomas and graduate degrees increases the likelihood of school closure.** Why would these two seemingly positive variables work against keep-

ing a school open? The answer may be found in the extremes these two might exemplify. Communities with higher percentages of the population with graduate degrees often demand greater student achievement and services for the students. If those services are not provided, these same community people will look for “solutions” or alternatives to public schools.

*Table 3 – School Predictors of School Closure*

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Enrollment		Neutral	
EAV per pupil		Neutral	
Expenditures per pupil	Decreases		
Education fund		Neutral	
Teacher salaries		Neutral	
District tax rate		Neutral	
Elementary-only district		Neutral	
Percent low income		Neutral	
Percent Latino		Neutral	
Percent African American			Significantly increases
Teacher experience	Decreases		
Percent does NOT meet math goals		Neutral	
Percent exceeds math goals		Neutral	
Percent does NOT meet reading goals		Neutral	
Percent exceeds reading goals	Decreases		

*Table 4 – Community Predictors of School Closure*

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Poverty rate			Increases
Urban, 2500 – 1 million persons		Neutral	
Median household income		Neutral	
Median house value		Neutral	
Vacancy rate			Increases
Unemployment rate		Neutral	
Tax cap county		Neutral	
Percent immigrant	Decreases		
Percent in agriculture	Decreases		Increases
Percent with a high school diploma			Increases
Percent with BA/BS		Neutral	
Percent with graduate degree			Increases

## Factors you might influence

Only three variables, if increased, decrease the likelihood of closure. Of these three, two appear to be under the control of school leadership. Therefore, knowing and understanding them is important, because influencing them is within the realm of the school leadership's responsibility.

- **An increase in the expenditures per pupil decreases the likelihood of closure.** While this may seem counterintuitive, the fact remains that open schools spend more per pupil than closed schools did, and by a fairly significant amount. Therefore, this variable is a means of being able to address an issue of school closure.
- **An increase in teacher experience decreases the likelihood of closure.** This may also seem to be counter to what would be thought true. If you raise teacher experience this also raises the cost of the teachers and costs the district more. This variable is very much connected to the one above because an increase in teacher costs would increase the expenditures per pupil. Increased teacher experience is often related to increased student achievement and better student learning.
- **An increase in the percentage of immigrants in the community decreases the likelihood of closure.** This community variable could be explained in that immigrant families are very education minded and are determined to make sure their children attend school and do well. This would be helpful in a school that needs students to be students.

What is it that school board members and administrators must do when the above findings are similar to their own schools? Understanding which variables drive the predictability of closure and its effect can help the board and community know which areas to work on by recognizing which factors might help the most. Having that knowledge is far better than guessing at what to do. The closure of a school is a complex issue and all the variables must be reviewed to understand the complete picture.

## What does it mean?

Breaking the conclusions into three parts will make it possible to better understand the overall ramifications of the power of this study. First, when comparing closed and open junior high schools without taking into account other similarities or differences, the following are important:

*Understanding which variables drive the predictability of closure and its effect can help the board and community know which areas to work on by recognizing which factors might help the most. Having that knowledge is far better than guessing at what to do.*

- Schools that closed had greater percentages of African American students than those remaining open.
- Schools that closed had a higher home vacancy rate in their community, were in more rural places, and had a higher percentage of people with high school degrees and graduate degrees.
- Schools that remained open had higher expenditures per pupil, had greater teacher experience, and higher percentages of immigrants in the community.

Second, when looking at closed junior highs alone, the following findings are important:

- A downward trend in enrollment precedes closure by four to eight years.
- A downward trend in the education fund seems to precede closure by two to five years.
- A pronounced upward trend in per pupil operating expenditures precedes closure decisions.

Finally, when comparing open and closed junior highs that are similar on all other characteristics measured, the findings are:

- Larger expenditures per pupil decrease the

probability of closure.

- The economic health of communities (e.g. poverty, household income and unemployment) is inconsistently (and not strongly related) to the probability of closure.
- Larger immigrant populations in communities are linked to lower closure probabilities.
- Greater percentages of high school education levels and graduate degrees in the local population increase the likelihood of closure.
- The greatest school level predictor of closure is percentage of African American students in the school (and needs further study).
- When all school and community level effects are compared within levels of "ruralness," schools in the smallest and most isolated of rural counties (i.e. counties with no single community larger than 2,500 residents) have

the highest probability of closure. This is compared to schools in other rural counties with larger communities all the way up to and including schools in metropolitan counties. [This was not demonstrated in the tables and graphs above.]

When school board members and administrators compare the above findings to their own school(s), they may find one or two characteristics of a school that closed. Does that mean that their school is on a track that will lead to closure?

Probably not. Careful analysis of all of the predictors must be made, not just one or two. However, one or two factors can be a warning sign of things to come. Taking a careful look at *all* of the factors together can help give school leaders the answers they need.

# High school predictors over time

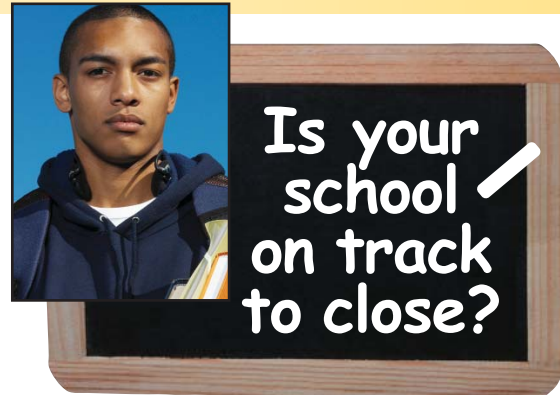
Graphs 9 to 12 on page 13 represent the significant predictors of high school closure over time: the education fund; per pupil operating expenditures; enrollment; and equalized assessed valuation (EAV). These graphs represent a 10-year history of each of these four variables just prior to the closure of high schools. It is important to remember that this is an aggregate of all the closed schools. The bottom line of the graph represents “time” and starts at 10 years and ends with closure at zero.

So what do these charts tell us about closing or not closing high schools?

Graph 9, the education fund, shows a steady increase over the first five to six years prior to the time of the school closure. An interesting phenomenon happens about four years before closure: the education fund starts a rapid decline. This mirrors a similar decline in enrollment, and it becomes apparent that with declining enrollment and the continued increases in the resources needed (per pupil operating expenses) that the community is unable to provide the support needed.

Graph 10, per pupil operating expenditures, shows a steady increase throughout the 10-year period. What is striking about this is that as enrollment falls, the cost to operate the school continues to increase at a very steady rate. This gap between enrollment and costs to operate demonstrates one of the major factors in school closure.

Graph 11, school enrollment, demonstrates why this is one of the main predictors of school closure. When declining enrollment is combined with increasing operating expenditures per



pupil and decreasing education fund expenditures, the formula for school closure is high. Conversely, when enrollment increases, operating expenditures per pupil decrease, the education fund stabilizes and the health of the high school becomes more stable.

Graph 12, equalized assessed valuation, demonstrates a rising value that ends up quite a bit higher over the 10-year period before school closure. When compared to high schools that remained open, this amount is significantly lower and highly connected to the inability of the school to raise funds in the same manner as the open schools.

## **Additional predictors**

Not all predictors can be shown over time, so to what degree do they affect closure overall? The analysis of the data suggests 28 variable predictors shown in Tables 5 and 6 on page 14. These tables provide an overview of the predictors and their values in helping understand their relationship to high school closure.

Table 5 addresses the “educational/school” predictors; Table 6 the “community” predictors.

To read the tables, use the following for-

mula: "Increasing (insert the variable name) (insert the column designation) the likelihood of closure." The first variable would read: "Increasing enrollment significantly decreases the likelihood of closure." The second variable would read: "Increasing EAV per pupil is neutral toward the likelihood of school closure."

Individually, what do these variables mean and how can we better understand them in the context of the whole?

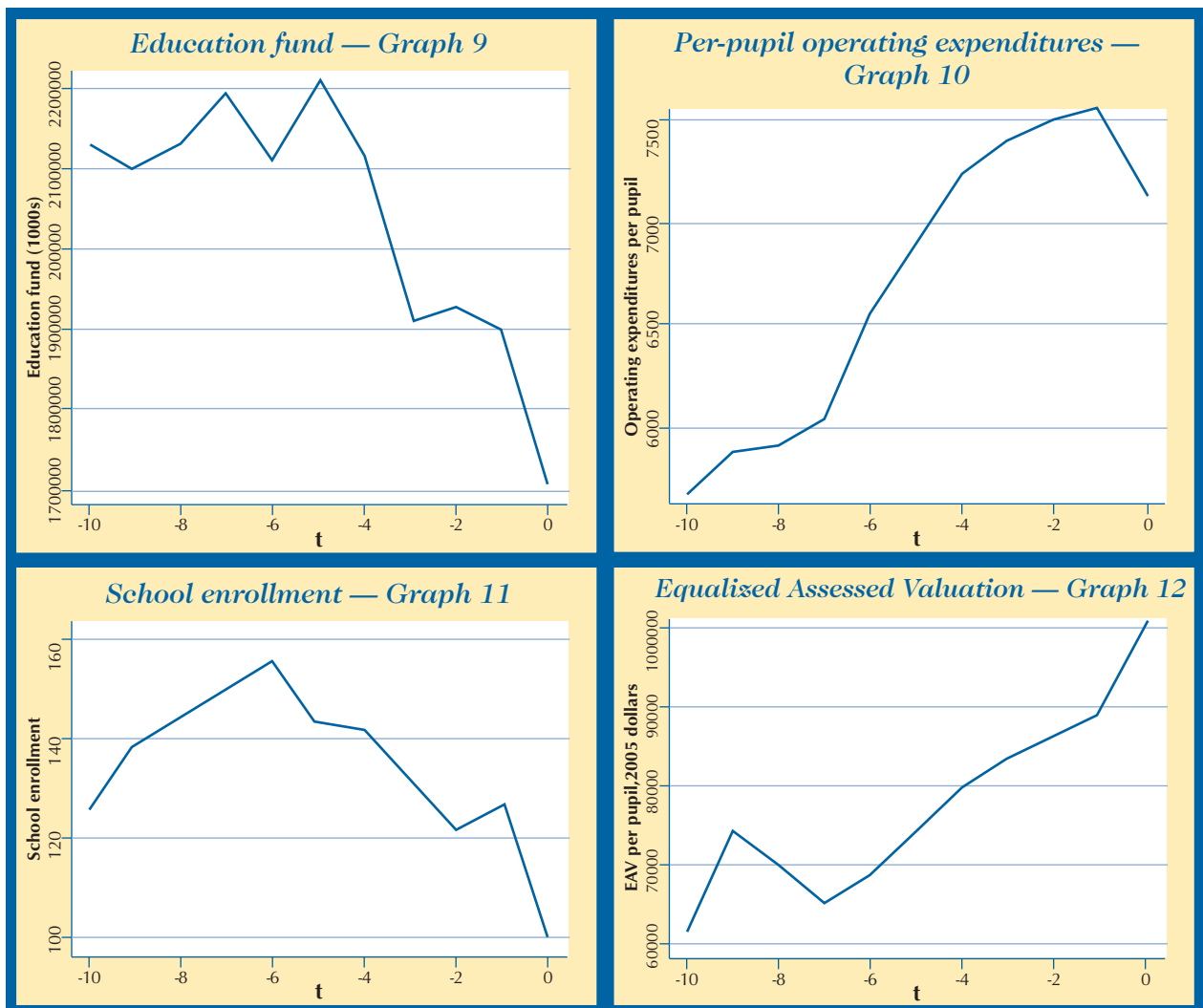
First, several variables have no influence on high school closure. These variables are designated as "neutral."

Two variables *increase* the likelihood of closure: district tax rate and percentage of the community with high school diplomas.

- **An increase in the district tax rate *increases* the likelihood of school closure.**

EAV plays an important role in schools and those at a disadvantage are high schools where EAV does not generate the same amount of revenue as high schools that remained open. Even though Graph 4 indicates a steady increase in EAV, the values are not the same as those of open schools, thus forcing increased tax rates to try to generate the same amount of funding. Continued increases in the tax rate in a community often results in the community being unable to continue to support the tax burden.

- **An increase in the percentage of those with high school diplomas in the commu-**



nity **increases the likelihood of school closure**. This study was a statistical analysis of vast amounts of data and information, but statistics do not explain why this variable would behave the way it does. More research needs to be done in this area, but it could be tied in with high school graduate parents expecting more opportunities for their students than the school can provide with declining enrollment.

Four variables, if increased, can *decrease* the likelihood of closure. Of these four predictors, one appears to be under the control of the school leadership. Knowing and understanding this variable is important, because influencing it is within the realm of the school board and administration.

- **An increase in enrollment will significantly decrease the likelihood of closure.** Many would say that this variable is not in the “control” of the school; how can schools be held accountable for the number of students who attend? But many factors can help attract students to a school. How students are treated, the quality of the education they receive, school activities offered, preparation for post-secondary education — all of these factors are within the control of school leadership. But even more important than *attracting* students is *keeping* them in school. A high dropout rate signals a need to look at retaining students and meeting their needs. Schools can’t do it alone. The community must help with this variable by providing opportunities for families that will attract them to live and stay in the community.

- **An increase in the school’s poverty rate decreases the likelihood of closure.** While this seems to be counter-intuitive, increases in the poverty rate also bring addi-

tional funding from state and federal sources. By offering additional programs and help to students in need, schools decrease the likelihood of closure.

- **An increase in median home values in the community decreases the likelihood of closure.** An increase in the median home values does several things. First, it increases the EAV and makes more funding available for the school. Second, increased values means homes are in demand, which usually means people

**Table 5 – School Predictors of School Closure**

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Enrollment	Significantly Decreases		
EAV per pupil		Neutral	
Expenditures per pupil	Neutral		
Education fund		Neutral	
Teacher salaries		Neutral	
District tax rate			Increases
Elementary-only district		Neutral	
Percent low income		Neutral	
Percent Latino		Neutral	
Percent African American		Neutral	
Teacher experience		Neutral	
Percent does NOT meet math goals		Neutral	
Percent exceeds math goals		Neutral	
Percent does NOT meet reading goals		Neutral	
Percent exceeds reading goals		Neutral	

**Table 6 – Community Predictors of School Closure**

Variable	Decreases Likelihood of Closure	Neutral	Increases Likelihood of Closure
Poverty rate	Decreases		
Median household income		Neutral	
Median house value	Decreases		
Vacancy rate		Neutral	
Unemployment rate		Neutral	
Tax cap county		Neutral	
In an urban area, <1 million	Decreases		
Percent immigrant		Neutral	
Percent in agriculture		Neutral	
Percent with a high school diploma			Increases
Percent with BA/BS		Neutral	
Percent with graduate degree		Neutral	

are moving into the community. Finally, increasing home values demonstrate community vitality and present the community as healthy and stable.

- **Location in an urban setting decreases the**

*When all school and community level effects are compared within levels of “ruralness,” consistently schools in the smallest and most isolated of rural counties (i.e. counties with no single community larger than 2,500 residents) have the highest probability of closure.*

**likelihood of school closure.** Therefore the converse is true also: location in a rural setting increases the likelihood of closure. The more rural the high school, the more likely that high school will close. This variable, by its definition, signifies less population (and fewer enrollments) and often lower EAV.

### **What does it all mean?**

What conclusions can be drawn from this? Breaking them into three parts will facilitate a better understanding of the overall ramifications.

First, when comparing closed and open high schools without taking into account any other similarities or differences, the following are important:

- Schools that closed were more rural and had a higher percentage of people with high school degrees.
- Schools that remained open had higher enrollments, greater percentages of poverty rates, higher median home values and were in more urban areas.

Second, when looking at closed high schools

alone, the following findings are important:

- A steep downward trend in enrollment precedes closure by four to six years.
- A downward trend in the education fund seems to precede closure by three to five years.
- A pronounced upward trend in per pupil operating expenditures precedes closure decisions, but drops off two to three years before closure.

Third, when comparing open and closed high schools that are similar on all other characteristics measured, the findings are:

- Larger enrollments decrease the probability of closure significantly.
- Community factors, such as household income and unemployment, are not strongly related to the probability of closure.
- Having a larger percentage of the community with a high school diploma increases the likelihood of closure.
- Test scores and academic achievement do not seem to influence high school closure.
- When all school and community level effects are compared within levels of “ruralness,” consistently schools in the smallest and most isolated of rural counties (i.e. counties with no single community larger than 2,500 residents) have the highest probability of closure. This is compared to schools in other rural counties with larger communities all the way up to and including schools in metropolitan counties.

When school board members and administrators compare the above findings to their own school(s) they may find one or two the characteristics of a school that closed. Does that mean that their school is doomed to close?

Careful analysis of all of the predictors, not just one or two, must be made. However, one or two factors can be a warning sign of things to come. Taking a careful look at all of the factors together can help give school leaders the answers they need and show them where to concentrate their efforts.

## ***For more information***

If individual schools would like a quick determination of the probability of closure, please contact the authors. By providing some basic data this can be done in a short amount of time. In-depth analysis of the probability of school closure will take additional time and research but can be accomplished for a nominal fee to cover expenses.

For additional information concerning individual school closure predicted probabilities contact:

- Frank Beck — [fdbeck@ilstu.edu](mailto:fdbeck@ilstu.edu) or 309-438-7770
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David R. Reynolds, *There Goes the Neighborhood: Rural School Consolidation at the Grass Roots in Early Twentieth-Century Iowa*, Iowa City, Iowa: University of Iowa Press, 1999

# Examining three recent closures

by Linda Dawson

Closing a school is never easy ... not for the teachers, the students, the parents and especially not for the board of education that has to make the final decision.

The three-part series that begins in this issue of *The Illinois School Board Journal* outlines a number of factors that researchers at Illinois State University have found are precursors to school closure. The factors vary depending on whether the school is for elementary, junior high or high school students. But the authors were adamant about one thing: the most often cited reasons of money and enrollment are not enough in and of themselves to doom a building to close.

The following three districts are among those that have recently needed to close one or more schools for varying reasons:

## **Aurora West USD 129**

Mike Chapin, community relations director for Aurora West USD 129, said his board's decision to close an elementary school for the 2009-10 school year did come down to a question of enrollment and budget, but another deciding factor was the age of the building.

The Lincoln Elementary building was more than 100 years old, Chapin said, and had the district's smallest enrollment. Plus, room for students was available in other nearby schools.

"During a public hearing at the school," he said, "it came down to the fact that we had a significant budget hole to fill and the school was so old."

Closing Lincoln saved the district more than \$900,000 in operating costs for fiscal year 2009-10.

## **Cairo SD 1**

Cairo SD 1 at the southern tip of Illinois voted in March to close Bennett Elementary for the coming year to balance the district budget. According to the district's website, the building had been built in 1949 and was "a symbol of education in Cairo." The 145 affected

students will be moved to Emerson Elementary, where class size will be about 20, compared to a 14-student average at Bennett. The district expects to save \$600,000 in 2010-11 and \$300,000 the next two years by closing the school, according to a story posted at <http://cairohighschool.ning.com/>.

## **Monmouth-Roseville CUSD 238**

When districts consolidate, the hope of the affected communities is often that everyone will be able to keep their buildings open. While that can be true in the short term, financial realities may intervene resulting in school closures.

In 2005, Monmouth USD 38 and Roseville CUSD 200 consolidated to form Monmouth-Roseville CUSD 238. On March 9, 2010, the school board voted to close two schools (Willits Primary School in Monmouth and Roseville Elementary) and drew the ire of citizens.

According to the *Monmouth Review-Atlas*, Superintendent Paul Wohlke told the board at a March 5 meeting that "the only acceptable option — based on education needs and transportation — was to close and sell Willits and Roseville, move Roseville Pre-K to the junior high school, and all second and third grades to Harding and fourth through sixth grades to Central."

Wohlke had based his options on class sizes, keeping the youngest students on the ground floor in buildings, transportation needs and long-term maintenance costs, in addition to which scenario would cause the least disruption.

"It is not an easy decision to wrestle with," Wolke said. "First and foremost, I'm responsible for the education of our children, that's that paramount issue that needs to be kept in forefront as we look at what's before us."

Linda Dawson is an IASB director/editorial services and editor of *The Illinois School Board Journal*.

# Methodology for the study

Robust sources of information and data were used to find predictors of school closure in order to get as clear a picture as possible of all the components that could be involved. Data was acquired from 1986-2005. The trends and predictors in the accompanying graphic were part of the analysis in order to determine the factors that could impact school closure.

Standard statistical techniques were used to determine which predictors had the strongest relative effect on school

closure, with 25 predictors giving understanding to the closure of elementary schools. Furthermore, because of the power of this research methodology, models of what happens *prior* to school closure can be made. An individual variable can be modeled to show what is happening years before school closure.

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