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Assessing Permanent School Closures: A Conceptual Framework

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Abstract

Amid widespread declining enrollment, the expiration of COVID-19 ESSER funding, and looming uncertainty in federal P-12 education involvement, many school districts may soon consider permanent school closures. While extant permanent school closure literature provides a starting point for future analyses, it often fails to advise the breadth of contexts in which future closures may occur, limiting what education leaders might learn from a disruptive intervention. In this article, we present a conceptual framework to guide permanent school closure research, inclusive of schooling and local contexts, idiosyncratic closure processes and dynamics, relevant analytic mechanics, and myriad important outcome measures and objectives.

Introduction and Motivation

Simply put, public schools are experiencing staggering enrollment declines. In the 2023-24 school year, 64.8% of public schools enrolled fewer students than they did four years prior in 2019-20.[1] The median school's enrollment decreased 4.9%, while one quarter of all public schools had a drop of at least 13.6%. These figures, while striking, are more modest than those of the past decade, over which time the median school lost 7.2% of its enrollment and one quarter of schools declined at least 19.6%. Moreover, these calculations only include schools which operated continuously over that timeframe, excluding those that closed permanently, suggesting that the full extent of enrollment decline may be even higher. Today, decision makers at nearly two in three schools must weigh how the effects of enrollment decline shape a multitude of policy considerations such as staffing and budgeting, considerations which, for many, include the possibility of permanent school closure.

Amid declining enrollment (Schueler & Miller, 2024; Goulas, 2024), the expiration of pandemic stimulus funding (LeFebvre & Master, 2024), and concerns over demographic cliffs of the child-aged population (Copley & Douthett, 2020), many public school district leaders are considering permanent school closures as a policy intervention. Yet, what is known about the consequences of permanent school closures is informed largely through research evaluating large-scale school closure events in a narrow and idiosyncratic set of public school contexts and outcome measures. Furthermore, while declining enrollment is one potential cause of school closures, there may be other causes as well. This may be especially true in charter school contexts, which often operate under market principles that suggest the replacement of lower-performing schools with higher-performing schools, though the metrics used to judge charter

[1] Authors' calculations from data obtained from the National Center for Education Statistics Common Core of Data.

schools often are contested (e.g., Hamilton & Stecher, 2010). Existing evidence, therefore, may be less applicable to some school settings than others, limiting the ability of policymakers and practitioners to engage in research-based and data-driven decision making.

In this article we present a conceptual framework informed by our work in St. Louis, Missouri. It is intended to guide researchers' understanding of permanent school closures in the reality of today's post-pandemic circumstances, and is adaptable to the varied local conditions and priorities closure conversations must consider and to which future research must respond.

Conceptual Framework

We summarize our conceptual framework in Figure 1. Our objective is to capture factors relevant to post-pandemic school closures research, ranging from important outcome measures, to variation in local precipitating circumstances, and perhaps most important, factors crucial to sound research processes, especially for quantitative design.

< INSERT FIGURE 1 ABOUT HERE >

Relevant Outcomes and Objectives

We start with the end in mind—relevant outcomes and objectives of permanent school closure—while acknowledging that this list will be incomplete to some and others will dispute the very notion that permanent closures should ever be employed as a policy solution.

In St. Louis, our project team's goal is to uncover the effects of forced mobility due to school closures by assessing student outcomes such as standardized test scores, attendance, disciplinary actions, and graduation rates as well as teacher outcomes including attrition and transfers. We are also tracking the pathways students and teachers take during and after school

closure processes to determine where they end up and how these changes may moderate student and teacher outcomes. Due to data limitations, several critical aspects will remain unexplored: social-emotional student outcomes (e.g., belonging), long-term academic outcomes (e.g., post-secondary attainment), measures of teacher job satisfaction and burnout, school organizational outcomes (e.g., expenditure reductions), and out-of-school "collateral" effects, including outcomes such as neighborhood changes in population, demographics, and community connectedness.

Permanent school closures are not a well-studied phenomenon. Perhaps surprisingly, little is known about the long-term impact of permanent school closures on student academic outcomes, the educator workforce, or district finances. Much of what we do know about these topics comes from the Consortium on Chicago School Research which has published multiple reports concerning students, educators, and community over the nearly fifteen years since Chicago Public Schools' 2012 school closures. The Consortium identified negative effects on learning outcomes (as measured by standardized test scores and GPA) for students who attended closed schools (de la Torre & Gwynne, 2009; Gordon et al., 2018) and documented "feelings of grief" on behalf of students and teachers who noted difficulties "integrating and socializing into the welcoming schools" (Gordon et al., 2018, p. 4). Attendance rates, on the other hand, did not change substantially following the closures (Gordon et al., 2018). Additional research from Chicago demonstrated limited and inequitable access to schools (Lee & Lubienski, 2017), increased teacher exits from closed schools (Lee & Sartain, 2020), and increased crime (in the case of mergers) (Brazil, 2020).

Likewise, Philadelphia serves as the backdrop for much of what we know about the connection between school closures and the surrounding community. Bierbaum (2021), Good

(2017), and McWilliams and Kitzmiller (2019), for example, articulate how history, injustice, and power all inform school closure processes resulting in disparate impacts against marginalized communities in the short- and long-term. In schools, student outcomes can vary widely, predicated on decisions dictating post-closure student movement. Steinberg and MacDonald (2019) document variation in outcomes depending on subsequent school assignment. For instance, displaced students perform better when assigned to higher-performing schools, while their attendance and school disciplinary engagement suffer when assigned to schools farther away. And that's just one side of the student closure "ledger"; academic achievement among Philadelphia students in schools receiving displaced students declined. Even subsequent school assignment policies can vary, including whether mass closures dictate the creation of an (often contentious) receiving school roster, as in Philadelphia, or one-off closures lead to a general dispersal of students and educators to many surrounding schools.

However, that so much of our collective knowledge about school closures comes from a few cities is indicative of the need to broaden our research horizons. Ewing and Green (2021) identify significant differences between the school closure literature and where closures occur. Most research utilizes qualitative methodologies and focuses on large urban areas, especially those with mass closure events even though most school closures happen slowly and in suburban areas (Gallagher & Gold, 2017). In addition, school closure research often neglects the impacts on the most affected stakeholders such as students, teachers, administrators, students receiving special education services, and English language learners. By identifying these gaps in research, Ewing and Green (2021) reveal new pathways for researchers to engage with the topic of school closures.

Our study is motivated by the desire to address these literature gaps—both in our own work and to inform work across the country. In particular, much remains to be learned concerning the long-term effects of school closures on student, educator workforce, and district finance outcomes, especially across the diverse school contexts in which they occur. Although it is sparse, some patterns emerge in existing research regarding students, schools, and communities, which we review below.

Schooling Contexts

We classify the conditions precipitating closure into two categories: schooling and non-schooling (local and neighborhood). This dichotomization is somewhat arbitrary given the inherent interconnectedness between what happens inside of a school and what happens outside; however, it helps highlight that both schooling *and* non-schooling conditions inform closure considerations.

School closures are often preceded by decades of declining enrollment and dwindling finances. In the years leading up to the closure recommendation, affected high schools have higher per-pupil costs, while the district experiences an overall decline in both enrollment and child population (Billger & Beck, 2012). When compared to schools that remain open, closed schools have a lower student-teacher ratio and may have more trouble meeting state accountability standards (Hill & Jones, 2021).

Two decades ago, a hallmark feature of No Child Left Behind-driven school turnaround policy centered on shuttering and/or re-staffing low-performing schools (e.g., VanGronigen & Meyers, 2019). In the post-pandemic environment, however, low academic performance may or may not motivate contemporary closures, at least not from a federal policy mandate. Rather, concerns like the aforementioned enrollment decline, building utilization figures (the proportion

of current enrollment to building capacity), and district funding concerns may rise to the forefront of post-pandemic school planning. School leadership concerns may also assume center stage, including the presence or lack of elected decision makers (e.g., unelected mayoral or state-appointed boards) and public charter school management (both discussed subsequently). Here, it is important to note that while school enrollment decline and neighborhood population decline may be linked, these trends need not be—especially in choice contexts, as parents may seek to find what they perceive to be as better schooling options for their children or otherwise explore alternatives to their zoned traditional public school.

Local and Neighborhood Contexts

From a neighborhood perspective, closures may represent a classic chicken-and-the-egg story—in other words, does depopulation drive school closure, or vice versa? In rural communities school closures prompt population loss in some circumstances (Sageman, 2022), while in urban communities closures may be more likely to occur in potentially gentrifying neighborhoods where population has declined and home values have risen (Good, 2017). Gentrification considerations are nuanced, however, as overall population figures may increase without increasing—or even decreasing public school enrollment—as families without children and/or children who attend private schools move in (Candipan, 2020). In Chicago, majority Black census tracts with closed schools had a steeper population decline (9.2%) as compared to majority Black census tracts that did not (3.2%) in the five years following the 2012 mass closures (Karp et al., 2023). Conversely, majority White census tracts and those with no racial majority saw increases in population during the same time period (Karp et al., 2023).

Neighborhoods surrounding schools considered for closure may also see increasing poverty rates and higher property taxes (Billger & Beck, 2012). Additionally, schools that close

often have higher proportions of students who are Black or living in poverty (Gallagher & Gold, 2017; Hill & Jones, 2021), higher deferred maintenance costs (Dowdall, 2011), and lower building utilization rates (Weber et al., 2020).

There are local and neighborhood considerations after schools close as well. School closures often produce vacant buildings that are often difficult to sell because of their large size, school-specific layout, or overall condition, factors which make them hard to repurpose (Dowdall & Warner, 2013; FitzPatrick et al., 2023). Even when they do sell, they often sell for an amount far below their value (Dowdall & Warner, 2013). School districts are still responsible for the upkeep of vacant buildings, so when they remain unsold or reused these expenses may cut into any potential cost savings associated with closing the school in the first place (Karp et al., 2023).

Closure Process and Dynamics

Though grouped as one intervention—permanent school closures—the process, politics, dynamics, and details of closures often vary widely and each of these components may shape both the public discourse and the effects of closure. For instance, some closures occur as a mass policy event (e.g., Chicago and Philadelphia), while others occur as individual events within a narrow geographic boundary. Such dynamics often relate to the original rationale for closure, such as sharp financial pressures, and bear on critical student outcomes, like the need to reassign thousands of students and school personnel following mass closure, or relatively few following a one-off closure. Some closures may take years to transpire and include robust public engagement processes or extensive community protests, whereas others may occur suddenly and without much opportunity for stakeholder input. In each case, these dynamics can significantly impact closure outcomes.

How the closure process unfolds and how these debates are settled may hinge on the type of school governance. Whether the leaders and decision-makers are democratically elected by local constituents; mayoral or state appointees; or privately selected board members (i.e., charter school boards) may bear significantly on the strength and influence of local stakeholder voice and agency in closure considerations, particularly in marginalized communities or neighborhoods with fewer sources of conventional power. Often, closure debates center on the validity and breadth of metrics used in closure determinations and how those metrics are communicated and interpreted (Deeds & Patillo, 2015; Ewing, 2018). These power dynamics also influence discussions about alternatives to closure and whether closures actually address the problems they purport to solve.

Data and Research Mechanics

Closures research is challenged both by critical data constraints and important researcher decision making. At the outset, "simply" identifying treatment status–which schools actually closed and when–eludes many datasets. To illustrate this point, we compared federal NCES data to a dataset of closures and new school openings in St. Louis that was hand-constructed using state administrative data and confirmed through local newspaper coverage and other archival documents such as board meeting materials and charter sponsor correspondence. Since 2009, we note data discrepancies in 15.3% of permanent school closures (nine mismatches) and 11.7% of new school openings (seven mismatches), either pertaining to whether a school actually closed (or opened) or misidentifying the school year the event transpired. The differences between the data and reality may potentially bias any quantitative estimates of closures' effects revealing the importance of triangulating suspected closures in administrative data with archival records including newspapers; school board minutes and meeting documents; or other district records.

What causes these data shortfalls? Sometimes something as minor as a misspelled school name (e.g., Humboldt vs Humbolt); name styling (e.g., middle school vs junior high); a school or district code change; or a difference in punctuation (e.g., Saint Louis vs St. Louis) may mistakenly make it appear that a school closed. In other cases, local, state, and federal reporting to CCD may not match researcher closure definitions; in short, what do researchers consider permanent school closures? And, does that definition change from place-to-place or context-to-context? For example, some closure data includes schools that co-located with another school, merged with another school, moved to a new physical location, changed names and/or management (e.g., NCLB-era school turnaround), or changed authorizer (i.e., charter schools).

To help researchers sort through these potential inconsistencies, we illustrate a school closure example tree (Figure 2) to describe various factors researchers must consider when interpreting data. Although this matrix may seem to overly complicate the issue (though we observe each instance in our St. Louis context), these decisions may significantly change how we estimate who is impacted by school closure decisions and the extent of closures' effects.

< INSERT FIGURE 2 ABOUT HERE >

These examples demonstrate that there is no singular definition for what is or is not school closure that fits every context or scenario. Therefore, researchers must develop their own definition of school closure, apply it consistently throughout the research project, and articulate its definition clearly in all reports, articles, and publications. As school closures increase in frequency, these definitions will be integral in interpreting the findings of a particular study, triangulating results across studies (and study contexts), developing policy recommendations, and inspiring future research.

Simultaneous researcher decisions focus on school exclusion or inclusion, both in closure and comparison groups. For instance, extant research often excludes charter schools, special education schools, career and technical education schools, and/or other alternative schools. Excluding charter schools may be of particular concern, given their frequent closure and disproportionate presence in urban and/or low-income communities.

Finally, constructing counterfactual school groups to which closed school outcomes may be compared is a particular challenge, in part due to the fuzziness and/or multi-faceted nature of closure rationales and unobserved heterogeneity in school characteristics (e.g., political connectedness). Selection into or away from closure may correlate with some unobserved (or unmeasured) school characteristic which also influences relevant outcome measures, heightening the need for careful comparison group identification and communication. In the case of gradual school closures, endogeneity may be difficult to parse out, as a prior school closure may affect subsequent closures (or prevent subsequent closures), school composition or neighborhood conditions.

Moreover, determining what constitutes a meaningful counterfactual requires careful attention to closure intent and context. Should the comparison group consist of schools that were under consideration for closure but ultimately remained open (and is such a list accessible to researchers and/or the public)? Schools with similar trends in enrollment, academic performance, and facility quality? Or schools serving demographically similar populations in similarly resourced neighborhoods? Each choice has implications for the plausibility of the comparison, balancing internal validity against policy relevance and generalizability.

These challenges are compounded by the methodological reality that most causal inference strategies appropriate for closure research—such as matching, event studies, and

synthetic controls—depend on pre-closure covariates and/or outcome trends to approximate what would have happened in the absence of closure. This makes the definition of the baseline period a critical design decision. In the context of gradual or protracted closures, it may be unclear when the "pre" period begins and ends, as schools often experience years of public deliberation, disinvestment, or student attrition before the official closure date. In this regard, researchers must therefore consider whether to anchor baseline measures to the announcement date, the start of public debate, or earlier signals of vulnerability. These decisions can shape the interpretation and comparability of findings, and thus should be made transparently and aligned with the theory of change guiding the study.

Mediating and Moderating Factors

For some, the factors mediating and moderating the effects of closure matter just as much, if not more, than the closures themselves. These may include the sharp disproportionality of closures on communities of color, especially Black students and their families and communities. Since they are more likely to occur in neighborhoods with changing demographics such as increasing poverty rates and declining population, school closures are more likely to descend upon and disproportionately harm already marginalized populations including low-income residents, African Americans, or those lacking a high school diploma (Billger & Beck, 2012; Burdick-Will et al., 2013; Good, 2017; Tieken & Auldridge-Reveles, 2019; Weber et al., 2020).

More generally, student outcomes may depend on the type of schools and neighborhoods where students end up, which implies that both the context of the departure school and the context of the destination school may act as significant moderators. Similarly, the long-term outcomes of students affected by school closures may depend on short-term outcomes, which may be especially important as policymakers consider additional interventions for students

affected by school closures. For example, school closures may decrease belongingness for students (Gordon et al., 2018), which can lead to lower attendance rates, and, ultimately, higher dropout rates.

Conclusions and Next Steps

Given many schools' current public education challenges include enrollment decline, the expiration of pandemic-era stimulus funding, and an increasingly uncertain federal role in public education more generally, we expect permanent school closure debates to increase in number and expand to new locations across the nation. Though the research base on closures grew significantly following Great Recession-era closures, it often excludes much of the context relevant to contemporary circumstances. These details provide the requisite grounding for a holistic review of closures as an educational and community intervention.

While we plan on using this framework on our current research on school closures, we hope that it will guide other researchers in this area as well. Comprehensive and rigorous research is needed not only because school closures are an important education policy matter, but also because they are contentious and poorly understood by many policy makers and community members alike. School closures are accompanied by political pressure (Nuamah, 2022) and involve numerous intergovernmental considerations (Dowdall, 2011; Sigel-Hawley et al., 2017) and the quantitative data that forms the narrative utilized by policy makers often stands in sharp contrast to the lived experiences of community members creating conflict (Bierbaum, 2021; Deeds & Patillo, 2015; Ewing, 2018). This conflict exacerbates the lack of trust between policy makers and community stakeholders that stems, in part, from the belief that school closures do not correct the financial, infrastructure, or equity problems the district is trying to solve. If Chicago is any indication, this mistrust may exist for good reason. Analyses of the promises

made by Chicago Public Schools during its 2012 mass closure process find them to be largely unfulfilled, in part because the district did not monitor many critical outcomes (Karp et al., 2023).

This, too, justifies the importance of school closure research. While there is so much more to understand, what is known suggests the stakes of closure are high for school communities and their surrounding neighborhoods. Stakeholders fight for these objectives with good intent. In the absence of comprehensive and rigorous research, both predictors of closure and its outcomes, the public discourse surrounding school closure becomes dominated by political factors, historical context, and anecdotal evidence as that is the only information broadly accessible to stakeholders who wish to engage on the issue. However, this may lead to incomplete or misinformed policies that could further harm students and communities who are already disadvantaged. School closure decisions can change life trajectories for students, educators, and neighborhoods. Given the present likelihood that school closures will increase, researchers hold an obligation to fill the knowledge gaps that prevent data-driven and research-informed policymaking.

References

Bierbaum, A. H. (2021). School closures and the contested unmaking of Philadelphia's neighborhoods. *Journal of Planning Education and Research*, 41(2), 202-216.

Billger, S. M. & Beck, F. D. (2012). The determinants of high school closures: Lessons from longitudinal data throughout Illinois. *Journal of Education Finance, 38*(2), 83-101

Brazil, N. (2020). Effects of public school closures on crime: The case of the 2013 Chicago mass school closure. *Sociological Science*, *7*, 128-151.

Burdick-Will, J. Keels, M., & Schuble, T. (2013). Closing and Opening Schools: The Association between Neighborhood Characteristics and the Location of New Educational Opportunities in a Large Urban District, *Journal of Urban Affairs, 35*(1), 59-80.

Candipan, J. (2020). Choosing schools in changing places: Examining school enrollment in gentrifying neighborhoods. *Sociology of Education*, *93*(3), 215-237.

Copley, P., & Douthett, E. (2020). The enrollment cliff, mega-universities, COVID-19, and the changing landscape of U.S. colleges. *The CPA Journal*, *90*(9), 22-27.

de la Torre, M. & Gwynne, J. (2009). When schools close: Effects on displaced students in Chicago Public Schools. University of Chicago Consortium on School Research.

Deeds, V. & Pattillo, M. (2015). Organizational "failure" and institutional pluralism: A case study of an urban school closure. *Urban Education, 50*(4). 474-504.

Dougherty, S. M., Miller, A. F., & Yoon, Y. (2024). Charter School Expansion, Catholic School Enrollment, & the Equity Implications of School Choice. (EdWorkingPaper: 24-1027). Retrieved from Annenberg Institute at Brown University.

Dowdall, E. (2011). Closing Public Schools in Philadelphia: Lessons from Six Urban Districts. The Pew Charitable Trusts.

Ewing, E. L. (2018). *Ghosts in the Schoolyard*. University of Chicago Press.

Ewing, E. L. & Green, T. L. (2021). Beyond the Headlines: Trends and Future Directions in the School Closure Literature. *Educational Researcher, 51*(1) 58-65.

FitzPatrick, L., Issa, N., Karp, S., & Loury, A. (2023, May 18). Ten years later, more than half of Chicago's closed schools remain unused. *Chicago Sun-Times*. https://graphics.suntimes.com/education/2023/chicagos-50-closed-schools/buildings/

Gallagher, M. & Gold, A. (2017). Subtracting schools from communities. Urban Institute. https://www.urban.org/features/subtracting-schools-communities

Good, R. M. (2017). Invoking landscapes of spatialized inequality: Race, class, and place in Philadelphia's school closure debate. *Journal of Urban Affairs, 39*(3). 358-380.

Gordon, M. F., de la Torre, M., Cowhy, J. R., Moore, P. T., Sartain, L., & Knight, D. (2018). School closings in Chicago: Staff and student experiences and academic outcomes. Research Report. University of Chicago Consortium on School Research.

Goulas, S. (2024). Breaking down enrollment declines in public schools. *The Hamilton Project, Brookings Institution, Washington, DC*.

Hamilton, L. S., & Stecher, B. M. 2010. Expanding what counts when evaluating charter school effectiveness. In *Taking Measure of Charter Schools: Better Assessment, Better Policymaking, Better Schools*, ed. J. R. Betts, P. T. Hill, pp. 33–54. Lanham, MD: Rowman & Littlefield

Hill, A. J., & Jones, D. B. (2021). The effect of school closings on teacher labor market outcomes and teacher effectiveness. *Education Finance and Policy*, *16*(4), 584-608.

Karp, S., Issa, N., FitzPatrick, L., & Loury, I. (2023, May 18). Chicago closed 50 public schools 10 years ago. Did the city keep its promises? *WBEZ Chicago* & *Chicago Sun-Times*. https://graphics.suntimes.com/education/2023/chicagos-50-closed-schools/

Lee, J., & Lubienski, C. (2017). The impact of school closures on equity of access in Chicago. *Education and Urban Society, 49*(1), 53-80.

Lee, H., & Sartain, L. (2020). School closures in Chicago: What happened to the teachers? *Educational Evaluation and Policy Analysis, 42*(3), 331-353.

LeFebvre, J., & Master, S. (2024). Expiration of federal K-12 emergency funds could pose challenges for states. *Center on Budget and Policy Priorities*.

McWilliams, J. A., & Kitzmiller, E. M. (2019). Mass school closures and the politics of race, value, and disposability in Philadelphia. *Teachers College Record*, *121*(1), 1-44.

Nuamah, S. A. (2022). *Closed for democracy*. Cambridge University Press.

Sageman, J. (2022). School closures and rural population decline. *Rural Sociology, 87*(3). 960-992.

Schueler, B. E., & Miller, L. C. (2024). Post-pandemic onset public school enrollment and mobility: Evidence from Virginia. *Educational Evaluation and Policy Analysis*, *46*(4), 788-794.

Siegel-Hawley, G., Bridges, K., & Shields, T. J. (2017). Solidifying segregation or promoting diversity? School closure and rezoning in an urban district. *Educational Administration Quarterly, 53*(1), 107-141.

Steinberg, M. P., & MacDonald, J. M. (2019). The effects of closing urban schools on students' academic and behavioral outcomes: Evidence from Philadelphia. *Economics of Education Review*, *69*, 25-60.

Tieken, M. C. & Auldridge-Reeves, T. R. (2019). Rethinking the school closure research: School closure as spatial injustice. *Review of Educational Research, 89*(6). 917-953.

VanGronigen, B. A., & Meyers, C. V. (2019). How state education agencies are administering school turnaround efforts: 15 years after No Child Left Behind. *Educational Policy*, *33*(3), 423-452.

Weber, R., Farmer, S., & Donoghue, M. (2020). Predicting school closures in an era of austerity: The case of Chicago. *Urban Affairs Review, 56*(2). 415-450.

Figure 1. School closures conceptual framework

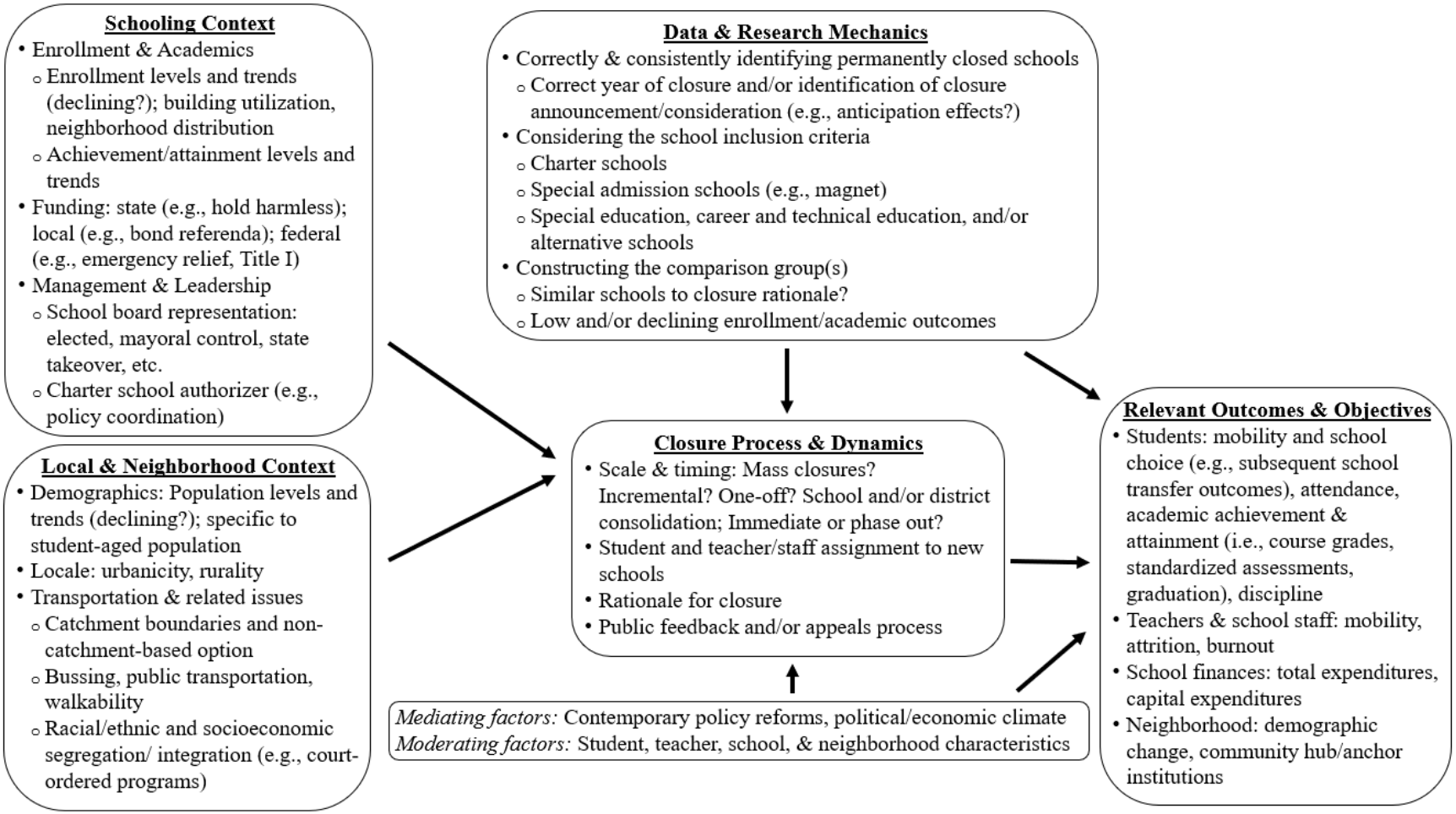

Figure 2. School closure decision matrix

	School Status	**LEA Status**	**Determination**
Ex. 1	Closes	Remains open	Closure
Ex. 2	Closes	Remains open	Closure
Ex. 3	Closes	Closes	Closure
Ex. 4	Name change	No change	Not closure
Ex. 5	Name change	Name change	Not closure
Ex. 6	Co-location with another school	No change	Likely not closure, but may be context dependent
Ex. 7	Move to new location or new building is constructed and retains same name	No change	Not closure
Ex. 8	No changes	Changes name and/or sponsor (charter)	Not closure
Ex. 9	State ID change	No change	Usually not closure
Ex. 10	No changes	State ID change	Usually not closure
Ex. 10	Merger with other school(s)	No change	Unclear, context dependent