Management, Control, and the Challenge of Leaving No Child Behind

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ABSTRACT: I integrate scholarship on federalism, public management, and organizations to develop a management-oriented approach to the study of intergovernmental policy implementation. I apply my approach to the early implementation of the No Child Left Behind Act of 2001 (NCLB), the main U.S. federal law addressing K-12 education. I emphasize the substantive distinction between policy outputs and outcomes and argue for more balanced coverage of both in empirical political science research. My core argument is that intergovernmental policy implementation in general, and the NCLB case in particular, is best conceptualized as a series of management challenges rather than as a limited battle for control between federal principals and their agents working elsewhere in the American federal system.

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Few people interested in American education policy possess lukewarm attitudes about the No Child Left Behind Act of 2001 (NCLB). Interest groups, politicians, and policy advocates alike have characterized this most recent reauthorization of the Elementary and Secondary Education Act (ESEA) as everything from the last great hope for American education to a cynical attempt to undermine the nation's public schools.

Optimists believe NCLB will help rescue the American education system from stagnation and guarantee that all children, regardless of race, ethnicity, or economic circumstance, will leave high school with solid skills in key subjects. Conversely, pessimists have lambasted NCLB, claiming its emphasis on standardized measures of achievement and yearly progress have created an administrative nightmare that will actually leave more children behind. Secretary of Education Rod Paige's recent comment—tongue in cheek, he later claimed—that the National Education Association (NEA) was a "terrorist organization" due to its criticisms of NCLB, and NEA President Reg Weaver's response that Paige should lose his job for the remark highlighted in stark terms some of the ongoing tensions that persist as the law moves deeper into the implementation phase (Dillon and Schemo 2004).

Much debate about NCLB has focused on battles for control between federal and state policymakers (Richard and Robelen 2004; Becker and Helderman 2004; Hoff 2004). Whether the federal government will actually enforce the law amidst sometimes open resistance from state and local officials has remained a pressing question. Seeing the law's implementation this way suggests a theoretical orientation akin to principal-agent approaches common in social science research. While these approaches and the focus on control in the NCLB debate do provide some insights, overall, I argue they fundamentally mischaracterize the key implementation challenges that this latest round of the ESEA has prompted. Most important among these challenges is that intergovernmental policy implementation—in education or other areas—depends as much or perhaps more on the creative management of policy networks as it does on federal leaders being able to compel state or local officials to act.

Even though policy successes in political systems around the world have become increasingly tied to the effective mobilization of key actors in policy networks, generally speaking, scholars, in particular, have remained too wedded to hierarchical perspectives of implementation that focus on control (Salamon 2002). In this paper I overcome this dominant tendency by integrating scholarship on federalism, public management, and organizations to offer a management-oriented approach to intergovernmental policy implementation. I apply my approach to the early state implementation of NCLB's accountability provisions. My core argument is that intergovernmental policy implementation in general, and the NCLB case in particular, is best conceptualized as a series of management challenges rather than as a limited battle for control between federal principals and their agents working elsewhere in the American federal system.

The paper proceeds in four parts. The next two compare and contrast the control-oriented and management-oriented perspectives that I have identified above. The third section analyzes several factors with the potential to influence policy outputs, specifically, the states' ability to craft laws consistent with the NCLB's accountability components. The fourth section reaches beyond policy outputs to see if the same factors related to policy production also help to predict

the actual results, or outcomes, that policies produce. That shift in focus from outputs to outcomes is important because elected officials and management scholars alike have increasingly come to define policy successes not simply by examining what governments do (their outputs) but also on whether those activities have any discernible and useful impact on the world (their outcomes).

Implementation as a battle for control

Political scientists have frequently used principal-agent approaches to study public policy implementation in the American federal system. While specific studies have varied, all build on the general framework of the principal-agent perspective, which sees two sets of actors working in a hierarchy. Bosses (principals) possess formal authority over subordinates (agents) in this arrangement, and successful policy implementation depends largely on how well bosses are able to compel their subordinates to act appropriately. Most of the best studies using the principal-agent framework attempt to incorporate several factors that may influence this strategic relationship between bosses and subordinates. The following examples offer a sampling of this sort of work.

Chubb (1985) sees federal education spending as involving different levels of control; a top tier of federal political principals who attempt to control federal education bureaucrats and a bottom tier involving those same federal bureaucrats, now acting as principals themselves, who attempt to control activities of state and local agents. Hedge, et al's (1991) study of surface mining and Wood (1992), who examines state and federal clean air enforcements, work within a principal-agent perspective to see the extent to which bosses and subordinates can have mutual influence on one another. Hill and Weissert's (1995) work on low-level radioactive waste disposal parallels the approach of Hedge, et al (1991) and Wood (1992). Lastly, Nicholson-Crotty (2004) studies the goals of federal principals and state agents to see if federal grant programs in health care and law enforcement produce greater state spending when federal and state goals in these areas are consistent. Fundamentally, in using a principal-agent lens, all of these works assume that government hierarchies and struggles for influence within them define the boundaries in which policy implementation occurs.

Judging by the advocacy of federal and state officials, a first glance at the initial years of NCLB implementation suggests the law appears to fit the principal-agent mold. When President George W. Bush signed NCLB, he promised that the federal government would do all it could to help states carry it out, but that help would not involve lowering goalposts or pushing back deadlines. One of the core problems with past ESEAs, the president reasoned, was the federal government's meager enforcement efforts. In a meeting with state education chiefs in early 2002, Secretary Paige agreed. He warned the chiefs that "I took an oath to enforce the law, and I intend to do that. I will help states and districts and schools comply—in fact I will do everything in my power to help—but I will not let deadlines slip or see requirements forgotten" (U.S. Department of Education 2002).

Less than two full years into the act's implementation, on June 10, 2003, Bush and Paige held a press conference to mark, in the president's words, "an historic milestone of accountability." In describing the states' progress on developing their accountability plans, as the NCLB required, Bush celebrated the fact that "this morning, Secretary Paige has approved the

plans of 17 more states, bringing us to a total of 100 percent of the accountability plans in place." To emphasize magnitude of this result, Bush reminded listeners that "in January of 2001, only 11 states were in compliance with a 1994 education law [the previous ESEA reauthorization known as the Improving America's Schools Act]. Every state, plus Puerto Rico and the District [of Columbia], are now complying with the No Child Left Behind Act after one year" (White House Office of the Press Secretary 2003).

Overall, if implementation is a battle for control, these results suggest that a firm federal commitment to enforcement motivated state agents to complete their work as required. There is one important flaw in this interpretation, however: the data do not support it. A closer look at state efforts reveals that all states had not fully implemented the law's accountability provisions as the president and secretary indicated.

Table 1 describes the extent to which states had completed work on NCLB's 31 required accountability elements. As the table shows, the proportion of states possessing a final policy on each element as of June 2003 ranged from a high of .82 (elements 18 and 22) to a low of .54 (element 6); the majority of elements, 16, hovered in the .60-.69 range. Looking across all elements, slightly more than one-third of the states possessed final elements on all 31 of them. Thus, across the nation, much policy development work still remained.

Table 1 about here

How would one explain this discrepancy between the actual results and Bush and Paige's statements? If state agents somehow tricked the president and education secretary into thinking that progress was complete then the results presented in Table 1 would not necessarily be inconsistent with the principal-agent view. Information asymmetry is one of the key realities that principals and agents in hierarchical relationships both face. One actor often possesses information that the other desires. When one party withholds or obfuscates key details or evidence the other may make decisions assuming a state of the world that does not actually exist. In the NCLB case, then, one might explain Bush and Paige's remarks as resulting from the efforts of shifty states who attempted to mislead them about their policy progress. Why else would federal principals who wield control send such a powerful signal to their subordinates—congratulating them for a job well done—when actually the agents had much work left to complete?

The possible presence of information asymmetry is not enough to rescue the principal-agent perspective in this case. As part of the process of developing accountability plans, states were required to report their progress to Secretary Paige at the U.S. Department of Education. The data reported in Table 1 come from 50 documents (one from each state) known as the Consolidated State Application Accountability Workbooks. In those workbooks, each state summarized for the department its progress across the 31 different accountability elements noted in the table. Thus, Paige's approval of the states' plans occurred in the presence of these data on policy progress.

The results from the workbooks offer an important case (there are others, too) of how the dynamics of NCLB's first two years have veered far from what one would expect if

implementation followed a model organized primarily around command-and-control. Bush and Paige's seemingly inexplicable assertions about state progress begin to make more sense, however, if one considers state implementation of NCLB from a perspective organized around management challenges.

Implementation as management of policy networks

If NCLB implementation is properly seen as a series of management challenges more than a battle for control, an obvious initial question arises: Who manages K-12 education in the American federal system? The short answer is just about everybody.

Unlike other nations, where K-12 education systems possess more coherent governance structures, power and responsibility are greatly dispersed in the United States. The old saying that education is a national priority, a state responsibility, and a local function captures different elements of this idea. Great variability across the American states poses challenges for anyone wishing to study education governance in more than an anecdotal way. Fortunately, adapting Wilson's (1989) framework on organizations—which sees public management centered on the activities of operators closest to the policy environment, managers who have one eye on the front lines and another on the board office, and executives who attempt to develop and put grand strategies into motion—provides a nice analytical tool for understanding intergovernmental policy implementation in the dispersed American system.

Even though Wilson (1989) developed his ideas to describe "what government agencies do and why they do it" (the subtitle of his well-known book), one can apply the executive-manager-operator framework to the American federal system as a whole (Manna 2003b). In other words, actors across the American intergovernmental system are jointly responsible for managing K-12 education in the United States. Beginning with that premise is useful because it captures elements of hierarchy that are consistent with American federalism and some of the virtues of the principal-agent view. A management approach also begins to reveal the complicated nature of the intergovernmental networks responsible for governing American schools.

Even though the U.S. federal system and some of its constituent administrative elements may resemble hierarchies (as in a specific government agency, for example), how those elements come together to produce and implement policy typically requires reaching beyond the official boundaries of control. Incorporating hierarchical organizations and policy networks into a single perspective of management provides the most complete way to characterize policy implementation across the American federal system (Kettl 1997; Agranoff and McGuire 2001; Kettl 2000; Salamon 2002).

Consider state officials, for example, and their important role as middle managers in the American intergovernmental system. In education, as in other policy areas, states themselves are not coherent organizations, but rather the sum of several different institutional parts all with varying levels of authority and control over different parts of policymaking. State education chiefs and their respective education departments, state boards of education, legislatures, and governors all play significant roles in these systems. How well these state-level actors work

among themselves and negotiate the concerns, requests, and apparent commands coming from federal executives and local operators is an important variable that can influence policy results.

In that sense, state leaders who seek education policy successes are not much different than President Bush and Secretary Paige who, in trying to make NCLB work, must contend with and depend upon a network of managers and operators across the federal system. Despite the president and secretary's criticisms of previous efforts to implement the ESEA, which they argue was lackluster due to weak federal enforcement, in practice they have behaved much like past presidential administrations by adjusting the law's requirements to accommodate state concerns. The recent change to NCLB regulations that define "highly qualified" teachers is one among many examples of these adjustments (Robelen 2004). In short, to manage policy well, state and federal leaders need to know when to be forceful, when to encourage, and when to cajole other executives, managers, and operators in the education policy network. Present discussions about NCLB omit much of this important nuance because the conversations have too often centered on command-and-control issues and less on the realities of intergovernmental implementation, which depends a great deal on creative persuasion.

Seen in that light, the comments from Bush and Paige at their June 2003 press conference begin to make more sense. Perhaps their actual pronouncement was overstated, but nevertheless the need to encourage state efforts already underway (nearly all states had made some measure of progress on the law's accountability provisions) no doubt was designed in part, at least, to sow progress and build support for the law among state managers and local operators. Federal support amidst noticeable (though not complete) state progress can be incredibly valuable for state leaders who themselves have important management hurdles to negotiate as they attempt to build valuable local support for federal initiatives they are administering (Cohen 2002).

This combination of commanding, cajoling, and encouraging—what essentially amounts to *managing*—has been a common feature of American education policymaking since at least the 1960s when federal and state officials began to take greater interest in the nation's schools (Manna 2003a). These features also serve as a useful reminder that politics across the American federal system can have important impacts on intergovernmental policy implementation. Certainly, building political support for policy initiatives is important during the legislative process; but ongoing political support is also crucial to maintain momentum and prevent backsliding in policy networks.

The next section builds on the discussion present in these first two sections by exploring empirically some of the ways that features of education policy networks have influenced NCLB implementation.

Analyzing policy outputs: NCLB's accountability provisions

Based on the previous two sections, one could ask what observable implications a networked perspective suggests for the production and intergovernmental implementation of public policy. Focusing on policy outputs for now, I consider three. First, institutionally dispersed power is likely to slow the policymaking process. This occurs because actors attempting to harness the potential energies of policy networks need to mobilize more players, which can be cumbersome and attenuate action. Second, institutional capacities can both

enhance and retard policy production. Resources at the direct disposal of network actors can allow them to promote their policy initiatives. Also resources flowing in from other sources in the network can create opportunities as when an infusion of outside money, for example, supports ongoing work. But contributions from elsewhere can simultaneously impose constraints given that external resources (both financial and political) typically come with strings or demands attached. Finally, political cross-pressures in networks are also likely to influence policy production. While networks of bureaucrats are certainly important, so, too, are political networks that bring together party activists and leaders who can lend mutual support to one another's programs (Beer 1978; Manna 2003a).

Modeling policy production

To probe these three expectations in the NCLB context, I examine the specific accountability components of the law. Among its many parts, NCLB requires states to develop accountability plans, which includes the 31 specific elements outlined in Table 1, to guarantee that all students will be proficient in reading and math by 2014. The U.S. Department of Education reported state progress on these elements in June 2003 in the aforementioned accountability workbooks. Because overall they address substantively different aspects of accountability, I use each element as a dependent variable in a logit regression in which these 31 dependent variables are coded 1 if a state had developed a final policy for an element and 0 if it had not.

I assume that state conditions and other key factors prior to 2003 will influence a state's ability to develop final policies on the accountability elements. Thus, the independent variables come from calendar or school-years prior to 2003, with about half from 2002 and the rest from 2000-01. The Appendix provides details on all the variables.

These independent variables, which I group into four categories, tap several features of the policy environment confronting the states. Two variables capture different features of *state governance*: whether the state's governor can appoint, without formal legislative consent, the chief state school officer, and whether the state's governor possesses power to appoint members of the state board of education also without a need for formal legislative approval. Both of these measures are coded 1 if the governor possess this appointment power and 0 otherwise. Increasingly, during the 1980s and 1990s, governors asserted greater control over state education governance. In policy circles, advocates argued that stronger gubernatorial control would improve coordination of education policymaking by minimizing delays and inefficiencies in policy production (Cohen 1987).

The second set of independent variables measure different elements of state *policy capacity* and incorporate some of the factors in intergovernmental networks that may influence state efforts. One measure is an independent assessment of the quality of state standards and accountability efforts as measured on a 100-point scale (higher numbers represent higher quality) that researchers at *Education Week*, an education trade publication, have developed. States with strong standards and accountability provisions may have an easier time developing similar policies that conform to federal guidelines. An alternative prediction is possible, too, which is that a state with a well-developed accountability system of its own may actually have greater difficulty meeting federal requirements; sometimes transitions from one system to another are

more challenging than simply starting from scratch, especially when those transitions involve reopening old political controversies. I also include two other capacity variables: the percent of K-12 education spending in the state that comes from federal sources and the percent that comes from local sources. As other levels of government assume greater responsibility for education finance, states confront a more complicated policy network with federal executives and local operators demanding increased attention, which may make it more difficult for state managers to make policy.

A third category of variables captures different elements of the state *political environment*. In addition to their education agencies and boards, governors and state legislatures also are important stakeholders in the policy network governing K-12 education. Thus, one variable captures whether the same political party controls the governor's mansion and the legislature. This measure of divided government is coded 1 if these institutions are divided and 0 otherwise. Because governors and legislatures assert important influences over the development of state education policy, one might expect a divided government to slow down policy production by complicating the policy network. Two additional variables tap the political influence of the governor and the potential influence of political cross-pressures in the American federal system. An indicator variable capturing gubernatorial party change is coded 1 if the out-party captured the governor's mansion in the 2002 election and 0 if the incumbent party maintained control. If governors are indeed critical members of the K-12 network, a change in this important position amidst state efforts to respond to NCLB's provisions (remember, NCLB became law in January 2002) could create havoc and hamper policy development. A final indicator variable codes whether the governor during 2002 was Republican (1 if so, 0 otherwise). This measure introduces an intergovernmental dimension of politics, yet another feature of the network governing K-12 education. Given that President Bush has made NCLB one of his top domestic priorities, even after the attacks of September 11th (Manna 2004), governors sharing the president's party may have exerted extra effort to get the law off to a good start.

A final set of variables measures three important elements of *state conditions* that are especially relevant for the NCLB accountability provisions. One variable captures the percent of state students that are white, another measures the percent qualifying for free and reduced price school lunches, and a final one indicates the percent of students who have limited proficiency in English. These measures are potentially important for policy production because NCLB stresses subgroup accountability across student groups; in other words, students in all categories need to be making achievement progress in reading and math or else schools will receive designations as needing improvement. States with student populations that are more racially diverse, contain more impoverished students, and possess students only beginning to master English would face a more challenging accountability environment than other states, which could translate into increased pressures from local operators. Greater racial, economic, and language diversity could also multiply the political pressures on state policymakers as they attempt to engineer accountability systems to leave no children behind.

Factors influencing policy production

Rather than presenting a comprehensive set of results from the 31 separate logit regressions, for substantive and aesthetic reasons I take a different approach outlined in Figure 1. Each of the four panels in this figure focuses on one set of independent variables: governance,

capacity, politics, and state conditions, in that order. The horizontal axis for each panel contains 31 points, one for each logit model, while the vertical axis indicates the z-scores associated with each variable contained in the particular panel. For example, in Panel A of Figure 1, readers can survey the 31 z-scores associated with the measure of whether the governor appoints the state education chief and the 31 z-scores associated with whether the governor appoints the state board.

The graphical display in this figure possesses two important virtues. It spares readers the drudgery of having to interpret a table containing over 300 separate parameter estimates. The figures still capture important substantive information—they reveal the data (Tufte 1983)—but in a relatively compact way that facilitates comparisons of the variables' behavior across all 31 models.

Also, the graphical results will appeal to the preferences of two kinds of readers. Some readers consider statistical analyses with state-level data as involving populations. This group sees the standard errors associated with independent variables (and their accompanying z-scores) as revealing information about the theoretical power and ability of the predictor variables to fit the data. There is no need to infer back to an unobserved population because with all 50 states, that population is in hand (Gill 2001). Other readers consider the inferential tropes (Kritzer 1996) associated with parameter standard errors and their z-scores to be valuable because even with a dataset containing all 50 states, it is debatable whether one actually possesses a population in a statistical sense. Figure 1 offers both groups something to consider given that z-scores higher in absolute value represent independent variables that fit the data increasingly well; and z-scores with absolute values hovering near 2.00 or above reveal variables that possess statistical significance at levels commonly reported in social science research.

Figure 1 about here

Consider first the results for the governance variables, which I present in Panel A of Figure 1. The measure capturing gubernatorial power over state boards does not appear to be consistently related to production of policy across all 31 elements. Still, most of the scores are positively signed, and about one-third hover between 1 and 2, which suggests a moderate fit. Substantively, these results suggest that boards with strong links to the institutional office of the governor (but not necessarily to the sitting governor given that board members' terms do not perfectly overlap with governors' terms) tend to facilitate policymaking. Conversely, the measure capturing whether governors possess power to appoint chief state school officers demonstrates an opposite pattern. Nearly all z-scores are negatively signed, and in slightly more than one-third of the models the data points hover between -1 and -2. Statistically, these results suggest this measure demonstrates reasonable fit. Concretely, they indicate that strong gubernatorial control of state education chiefs tends to be associated with a relatively poor record of policy production. While a tight link between a governor and state education chief may instill a bit of consistency in the state education policy network, chiefs who are political appointees may have difficulties running their education departments. If those possibilities are both true, the results here suggest the net effect on policy production may be negative. This result may be due to career staff resisting political control; it also may be further evidence to support Wilson's (1989) claim that political executives are rarely selected for their management skills.

Panel B reports the results on the capacity variables. The most powerful finding in this panel flows from the federal expenditure measure. With only a small number of exceptions, across all models the z-scores associated with federal spending are negatively signed and between -2 and -3, demonstrating an exceptionally strong fit.

Substantively, the results suggest two conflicting interpretations. On one hand, the results support a critical view of federal involvement in governance of the nation's schools. Since the expansion of federal grants for K-12 education in the 1960s, critics have argued that federal dollars have created colonists of state-level officials beholden to Washington, DC and not their state governments. The critics argue this arrangement can produce states with rogue education departments operating to achieve goals of their own, which may not (and often are not, the critics would charge) consistent with those of reformist leaders in state legislatures, governor's mansions, or on state boards. Because state political actors are often powerless to oversee state education departments' use of federal funds, the argument goes, federal influence in the policy network retards policy development. On the other hand, the results may indicate that federal dollars are simply flowing to states that lack administrative capacity. In other words, federal spending may not cause poor policy production but may be a response to it, a result consistent with research in other education policy contexts (Polinard and Wrinkle 1999).

Of the other two measures in Panel B, the local expenditure measure demonstrates relatively weak fit, even though most of the z-scores are positively signed, and about one-fifth are between 1 and 2. While not strong, the finding suggests that strong local influence over education finance may not necessarily retard state policy development. If true, that is a reassuring result because one might expect the opposite effect, namely, that strong local financing would produce a more complicated policymaking network for state policymakers to manage. Finally, the results on the state accountability measure are consistent with the hypothesis that states with well-developed standards and accountability systems of their own will have relatively more trouble adjusting their systems to accommodate NCLB. Nearly all of the z-scores are negatively signed and most are between -1 and -2.

Across all four panels, the political variables contained in Panel C demonstrate the worst overall fit. Of the 93 data points in the plot, only about one-quarter exceed 1 or are less than -1. Interestingly, though, all but two of the divided government measures are positively signed, which suggests (albeit weakly in a statistical sense) that a more politically complicated policymaking network may not necessarily retard policy development on matters of educational accountability. Additionally, all but three of the results from the variable capturing the presence of a Republican governor are positively signed. Even though that variable's fit is not strong, the signs do at least suggest some support for the hypothesis that Republican governors may have been working to help President Bush achieve an important domestic policy accomplishment with NCLB.

Finally, Panel D, which contains the state conditions variables, reveals a couple of substantively interesting findings. The most powerful result is that as the percentage of white students in a state increases, the state appears less likely to have completed work on NCLB's accountability elements. Only 1 of the data points for this variable is positively signed, and essentially half hover near -2. These results suggest that more racially homogenous states may

be experiencing difficulty working within the NCLB framework, which places great emphasis on accountability across a range of student subgroups (with race being one of the most important). The findings might also suggest that groups representing ethnic minorities in relatively homogenous states may not be able to muster the political pressure needed to encourage state policymakers to focus energies on subgroup accountability issues.

Among the other two measures in Panel D, the results associated with the variable measuring the percent of students who possess limited proficiency in English are relatively erratic, and the variable measuring the percent of students qualifying for free or reduced price lunches demonstrates mediocre fit. On the latter measure, though, nearly all of the data points are positively signed, which suggests an optimistic result. Even though racial homogeneity may serve to depress policy production for accountability, an increasing number of economically disadvantaged students appears to be associated with increased policy production (albeit weakly in a statistical sense). This finding is important given that the subgroup accountability components of NCLB are not only designed to improve achievement of racial minorities but also more generally students of economic disadvantage.

Analyzing policy outcomes: student achievement

The logit models in the previous section provide some insights about how relationships between federal executives, state managers, and local operators can influence state policy production in education. But as I noted earlier, these models focus on outputs, the things governments do, rather than the real-world outcomes that government policies produce. That examination of outputs is consistent with the vast majority of scholars who have studied intergovernmental policy implementation using principal-agent approaches (Chubb 1985; Hedge, Scicchitano, and Metz 1991; Wood 1992; Hill and Weissert 1995; Nicholson-Crotty 2004). In part, focusing on outputs is the natural result of a perspective that sees implementation as a battle over control—the key question being whether one level of government can get another one to take certain actions.

But as I noted earlier, policymakers and public management scholars alike have become increasingly convinced that outcomes are better indicators of policy success (Kettl 1997, 2000). Thus, in light of the results in the previous section it is worth pursuing one additional question that flows from a management perspective on intergovernmental policy implementation: Are the factors that influence policy outputs the same ones that matter most for predicting outcomes?

Certainly, public officials searching for effective policy levers would like to know if the same factors driving production of educational accountability laws (outputs) also matter for student achievement in reading and math (outcomes). If these factors do correlate then state managers attempting to improve student achievement, for example, would face a relatively less complex policy environment than if the results on specific variables tended to diverge. With all variables operating in the same way policymakers would face a less complex, and thus more cognitively forgiving (Jones 2003), environment.

In this section I briefly explore policy outputs by introducing four new dependent variables: state-level scores from the 2003 National Assessment of Educational Progress (NAEP), otherwise known as the "nation's report card." Two of these measures come from fourth grade

tests in reading and math and two are from eighth grade tests in those same subjects. To predict these results I use ordinary least squares regression and the identical sets of independent variables I have already introduced in the previous section. To remain consistent in presentation and to facilitate comparisons with the prior results, I present t-scores associated with each independent variable across these four models. Given the range of the values and the relatively smaller number of models (4 versus the 31 from the previous section), I present these results in a table, Table 2, rather than a figure.

Table 2 about here

The results for the two governance measures in Table 2 contrast with the results presented in Panel A of Figure 1. States with governors possessing powers to appoint state school chiefs and state boards appear to be more likely to have higher NAEP scores. This result diverges with the state school chiefs measure in the previous section where the influence of that variable tended to be negative. The results on the state boards measure tend to be consistent with the earlier results, which, though not fitting the data extremely well (in particular on the 8th grade results), appear to be positively related to student achievement. Overall, it is not immediately clear what would explain these results on achievement. It may be that when top state education officials operate with a more coherent institutional perspective they may be better able to press a more consistent message about why it is important that state students do well on NAEP.

The capacity measures appear next in Table 2. The results on federal funding parallel the results from Panel B of Figure 1. The two possible explanations for the earlier results may also apply here, with the caveat that because federal education dollars do tend to follow disadvantaged (and thus lower scoring) students, one might conclude that federal dollars would more likely represent a response to a problem rather than the cause of it. This possibility highlights the differences between outcomes and outputs: a variable may have the same directional impact on both types of results but for very different reasons. Also notice that even though the fit on the variable capturing the quality of state standards is not strong, in 3 of the 4 outcomes models the signs are positive, which is what one might expect. Better standards and state accountability systems would be more likely to produce higher student scores. These results contrast with the Panel B of Figure 1, however, showing again how the same variable may behave differently depending on whether one is studying outputs or outcomes.

Perhaps the greatest similarity between the policy production models and the student achievement models is the relatively inconsistent and weak apparent influence that characteristics of the state political climate have on outputs and outcomes. That is perhaps not surprising for outcomes as they are measured here: a snapshot in time. Intuitively it seems that student achievement would depend more on longer-term and capacity-oriented factors than on the more ephemeral political features of states that these three variables capture. Explaining their relative lack of influence on the policy production side is more difficult, though.

Finally, even though the results on the state conditions variables are as expected, they again illustrate some of the interesting variation that exists when one focuses attention on outcomes rather than outputs. In the student achievement models, as the percent of white students in a state increases NAEP scores tend to increase; the results on this measure have the

strongest fit of any variable in the analysis thus far, with t-values essentially between 3 and 5. Additionally, the percent of students receiving free or reduced price lunches, a measure of student poverty, tends to depress student achievement and possess a reasonable, though not incredibly strong, fit. Thus, like the governance variables the two measures present here both tend to help predict outcomes and outputs, but they behave in opposite directions.

Leaving no child behind in the American federal system

This paper reveals some of the advantages of studying intergovernmental policy implementation from a management perspective that incorporates measures of policy outputs and outcomes. While the analyses presented here provide an initial attempt to examine these topics in a careful, systematic way, it is worth mentioning two statistical limitations of the present work, which I plan to address in future efforts.

First, because a states' ability to produce policy and students' ability to perform well on reading and math tests depend on long-term as well as short-term factors, it would be worth building a more dynamic statistical model to examine policy outputs and outcomes that parallel the ones presented here. Including more time points, both for policy production and achievement, would not only increase the sample sizes involved but would also better represent the forces that might influence education policy production and student achievement results. A second issue involves the need to better represent the political environment that influences policy outputs and outcomes in education. The strength of a state's business community and teacher unions, for example, would likely have important impacts on policy production because these groups have been powerful advocates in education reform debates at the state level. And given the link between teachers and student success, looking at the influence of union strength on student achievement would provide another interesting way to see if this feature of a state's political environment has the same impact on outputs and outcomes. A similar outputs-outcomes comparison potentially exists with the business community given that business leaders have been strong policy advocates and have simultaneously developed partnerships with local schools to improve student experiences.

Despite these limits, my overall findings have important implications for scholars and education policy analysts. For scholarly readers, my results demonstrate some of the advantages of studying intergovernmental policy implementation from a management perspective organized around policy networks, outputs, and outcomes. Implementation is much, much more than simply a battle for control between principals and their agents. Leaders in a single chain of command may only produce policy successes to the extent that they can mobilize forces and actors beyond their formal control.

The distinction this paper makes between outputs and outcomes should appeal to both scholarly readers and those in the policy world. The latter are increasingly focused on outcomes, so work that illustrates where common variables seem to predict results on outputs and outcomes can be invaluable for those trying to design policy to improve concrete results. Unfortunately, by and large, political scientists who study federalism and intergovernmental policy implementation, with the exception of public management scholars, still tend to be fascinated with outputs. That focus may allow these scholars to specify theoretically tight and tractable models, but the frequent result, according to Wilson (1989, p. 23), is to generate "empirically

rather arid" analyses. If as political scientists we wish to be vital players in debates about education and other critical intergovernmental policy areas then we should seriously consider reorienting much of our empirical work to focus more attention on the results that policies produce, rather than nearly always training our lens on probing whether one government can compel another one to spend more money or perform more audits. Making such a shift may be easier said than done, but the substantive payoff will be well worth it.

Appendix

Interested readers will find the full regression results from the policy production and student achievement models posted on my web site, which is located here: <http://faculty.wm.edu/pmanna/research/research.htm>. Table A1 contains descriptive statistics all variables contained in the paper.

Table A1 about here.

Sources for the variables are as follows. *NCLB accountability elements:* Consolidated State Application Accountability Workbooks, Final Submissions. Posted to the U.S. Department of Education website <http://www.ed.gov/admins/lead/account/stateplans03/index.html>. Downloaded on August 11, 2003.

NAEP achievement scores: National Assessment of Educational Progress, 2003, 4th and 8th grade scale scores for math and reading. Downloaded on March 9, 2004 from <http://nces.ed.gov/nationsreportcard/mathematics/results2003/stateresults.asp> and <http://nces.ed.gov/nationsreportcard/reading/results2003/stateresults.asp>.

Governance variables: National Association of State Boards of Education, "State Education Governance at-a-Glance," compiled January 2003. Downloaded from <http://www.nasbe.org/Educational_Issues/Governance.html> on September 7, 2003.

Capacity variables: Rankings of state standards and accountability systems are from the "State of the States" section of *Education Week's* publication *Quality Counts 2002,* January 10, 2002. Downloaded on February 20, 2004 from <http://www.edweek.org/sreports/qc02/ templates/article.cfm?slug=17sos.h21>. Funding variables are from the U.S. Department of Education's Common Core of Data web tool, downloaded from <http://nces.ed.gov/ccd/ bat/index.asp> on February 20, 2004.

Political variables: National Conference of State Legislatures (NCSL), state governor, legislature, and overall party control in 2002, located at various places on the NCSL's web site: <http://www.ncsl.org>, and downloaded on February 20, 2004.

State conditions variables: U.S. Department of Education's Common Core of Data web tool at <http://nces.ed.gov/ccd/ bat/index.asp>. Data downloaded on February 20, 2004.

References

Agranoff, Robert, and Michael McGuire. 2001. American Federalism and the Search for Models of Management. *Public Administration Review* 61 (6):671-681.

Becker, Jo, and Rosalind S. Helderman. 2004. Virginia Seeks to Leave Bush Law Behind. *Washington Post*, January 24, 1.

Beer, Samuel H. 1978. Federalism, Nationalism, and Democracy in America. *American Political Science Review* 72 (1):9-21.

Chubb, John E. 1985. The Political Economy of Federalism. *American Political Science Review* 79 (4):994-1015.

Cohen, Michael. 1987. State Boards in an Era of Reform. *Phi Delta Kappan*, September, 60-64.

———. 2002. Unruly Crew: Lessons from the Clinton Administration's Attempts to Cajole the States into Complying with Federal Mandates for Standards-Based Reform. *Education Next*, Fall, 43-47.

Dillon, Sam, and Diana Jean Schemo. 2004. Union Urges Bush to Replace Education Chief over Remark. *New York Times*, February 25, A14.

Gill, Jeff. 2001. Whose Variance Is It Anyway? Interpreting Empirical Models with State-Level Data. *State Politics and Policy Quarterly* 1 (3):318-39.

Hedge, David M., Michael J. Scicchitano, and Patricia Metz. 1991. The Principal-Agent Model and Regulatory Federalism. *Western Political Quarterly* 44 (4):1055-1080.

Hill, Jeffrey S., and Carol S. Weissert. 1995. Implementation and the Irony of Delegation: The Politics of Low-Level Radioactive Waste Disposal. *Journal of Politics* 57 (2):344-369.

Hoff, David J. 2004. Utah Panel Votes to Quit No Child Left Behind Act. *Education Week*, February 11, 11.

Jones, Bryan D. 2003. Bounded Rationality and Political Science: Lessons from Public Administration and Public Policy (Typescript).

Kettl, Donald F. 1997. The Global Revolution in Public Management: Driving Themes, Missing Links. *Journal of Policy Analysis and Management* 16 (3):446-462.

———. 2000. Public Administration at the Millennium: The State of the Field. *Journal of Public Administration Research and Theory* 10 (1):7-34.

Kritzer, Herbert M. 1996. The Data Puzzle: The Nature of Interpretation in Quantitative Research. *American Journal of Political Science* 40 (1):1-32.

Manna, Paul. 2003a. Federalism, Agenda Setting, and the Development of Federal Education Policy, 1965-2001 (Unpublished Ph.D. Thesis), Department of Political Science, University of Wisconsin-Madison.

———. 2003b. States as Middle Managers in the American Federal System. Paper presented at Association for Public Policy Analysis and Management, 25th Annual Research Conference, November, at Washington, DC.

———. 2004. Leaving No Child Behind. In *Political Education*, by C. T. Cross. New York: Teachers College Press.

Nicholson-Crotty, Sean. 2004. Goal Conflict and Fund Diversion in Federal Grants to the States. *American Journal of Political Science* 48 (1):110-122.

Polinard, J. L., and Robert D. Wrinkle. 1999. Putting the Bureaucratic Horse before the Correct Cart: Bureaucracy and Organizational Performance in Schools. Paper presented at Annual Meeting of the Midwest Political Science Association, April 1999, at Chicago, IL.

Richard, Alan, and Erik W. Robelen. 2004. Federal Law Is Questioned by Governors. *Education Week*, March 3, 1.
Robelen, Erik W. 2004. Federal Rules for Teachers Are Relaxed. *Education Week*, March 19, web extra at http://www.edweek.com/ew/ewstory.cfm?slug=27flex_web.h23.
Salamon, Lester M., ed. 2002. *The Tools of Government*. New York: Oxford University Press.
Tufte, Edward R. 1983. *The Visual Display of Quantitative Information*. Cheshire, Connecticut: Graphics Press.
U.S. Department of Education, "Remarks [of Secretary Paige] to Meeting of Chief State School Officers," news release, January 9, 2002.
White House Office of the Press Secretary, "President Highlights Progress in Education Reform," news release, June 10, 2003.
Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books.
Wood, B. Dan. 1992. Modeling Federal Implementation as a System: The Clean Air Case. *American Journal of Political Science* 36 (1):40-67.

Table 1. Proportion of states with final policies on the No Child Left Behind Act's 31 required accountability elements, June 2003

No Child Left Behind accountability principles and elements	Proportion
Principle 1. All Schools. The accountability system…	
1. Includes all schools and districts in the state	.74
2. Holds all schools to the same criteria	.74
3. Incorporates the academic achievement standards	.78
4. Provides information in a timely manner	.66
5. Includes report cards	.76
6. Includes rewards and sanctions	.54
Principle 2. All Students. The accountability system…	
7. Includes all students	.76
8. Has a consistent definition of full academic year	.64
9. Properly includes mobile students	.72
Principle 3. Methods of AYP determinations. The accountability system…	
10. Expects all student subgroups, public schools, and LEAs to reach proficiency by 2013-13	.66
11. Has a method for determining whether student subgroups, public schools, and LEAs made adequate yearly progress	.60
12. Establishes a starting point	.64
13. Establishes statewide measurable objectives	.62
14. Establishes intermediate goals	.62
Principle 4. Annual Decisions. The accountability system…	
15. Determines annually the progress of schools and districts	.64
Principle 5. Subgroups Accountability.	
16. The accountability system includes all the required student subgroups	.74
17. The accountability system holds schools and LEAs accountable for the progress of student subgroups	.66
18. The accountability system includes students with disabilities	. 82
19. The accountability system includes limited English proficient students	.74
20. The State has determined the minimum number of students sufficient to yield statistically reliable information for each purpose for which disaggregated data are used	.66
21. The State has strategies to protect the privacy of individual students in reporting achievement results and in determining whether schools and LEAs are making adequate yearly progress on the basis of disaggregated subgroups	.76
Principle 6. Based on Academic Assessments.	
22. The accountability system is based primarily on academic assessments	.82

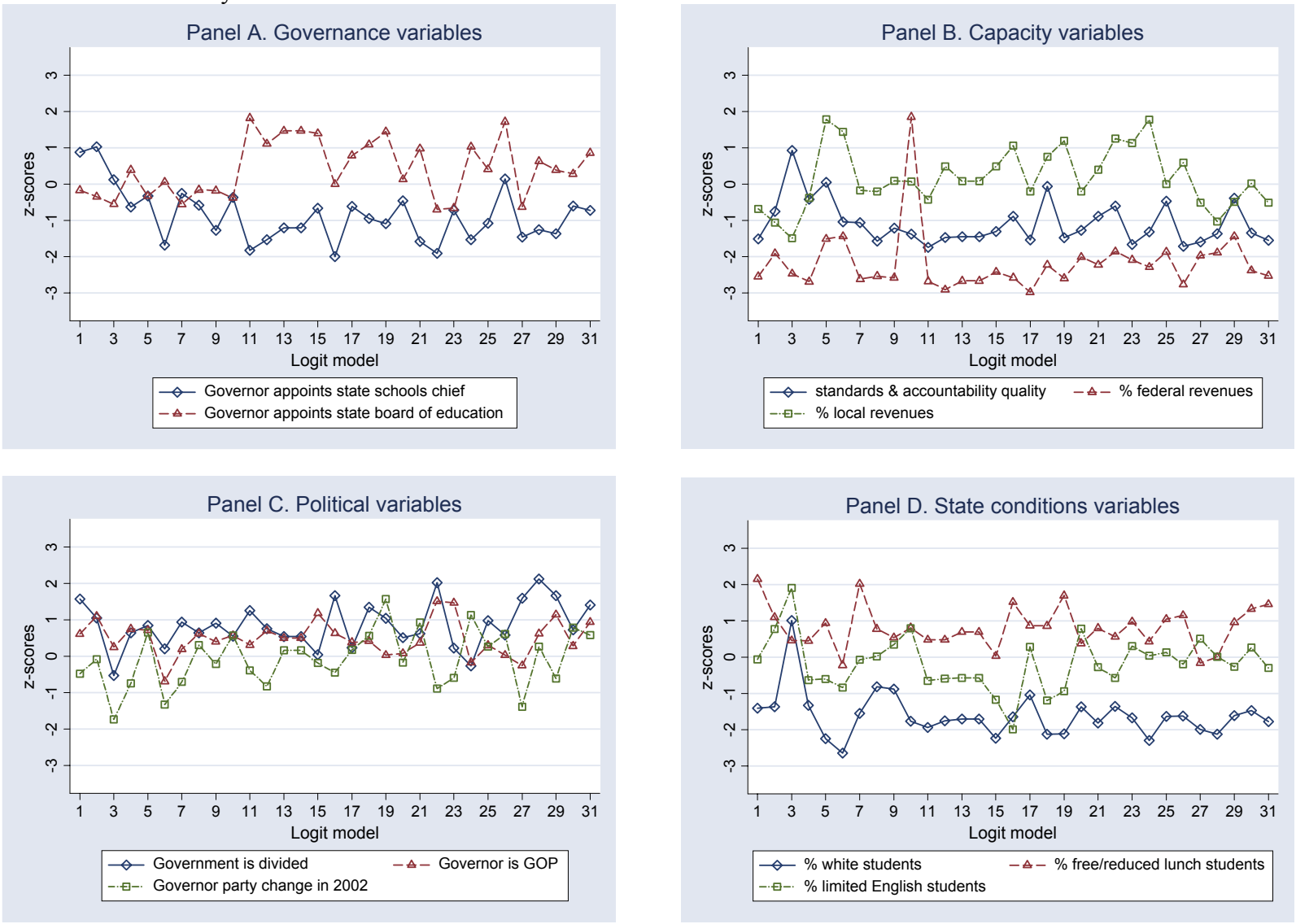
--Continued on next page--

Principle 7. Additional Indicators.	
23. The accountability system includes graduation rates for high schools	.66
24. The accountability system includes an additional academic indicator for elementary and middle schools	.72
25. Additional indicators are valid and reliable	.74
Principle 8. Separate Decision for Reading/Language Arts and Mathematics.	
26. The accountability system holds students, schools, and districts separately accountable for reading/language arts and mathematics	.64
Principle 9. System Validity and Reliability.	
27. The accountability system produces reliable decisions	.64
28. The accountability system produces valid decisions	.62
29. State has a plan for addressing changes in assessment and student population	.70
Principle 10. Participation Rate. The accountability system…	
30. Has a means for calculating the rate of participation in the statewide assessment	.66
31. Has a means for applying the 95% assessment criteria to student subgroups and small schools	.68
N	(50)

Note: All state accountability workbooks submitted to the U.S. Department of Education, with the exception of those from New York, New Hampshire, and Arkansas, indicated for each of 31 separate elements whether the state was still "Working" to develop a policy for that element, had "Proposed" a policy that still needed approval from various state institutions (i.e., state board or legislature), or had developed and approved a "Final" policy. To code results for New York, New Hampshire, and Arkansas, I read the narratives in these states' workbooks where the status of each element was described. *The proportions reported in the table represent the proportion of states that had developed and approved a "Final" policy.* For example, 32 states (proportion = .64) had final policies on element 26.

Source: Consolidated State Application Accountability Workbooks, Final Submissions. Posted to the U.S. Department of Education website <http://www.ed.gov/admins/lead/account/stateplans03/index.html>. Downloaded on August 11, 2003.

Figure 1. Influence of educational governance, capacity, politics, and state conditions on state completion of the No Child Left Behind Act's accountability elements



Note: Points on the x-axis of each figure represent logit models that correspond to the 31 elements listed in Table 1. Each of those 31 elements was analyzed in a separate logit regression (using Stata 8), with the dependent variable coded 1 if a state had completed a final policy on the element and a 0 otherwise. The points in each figure represent z-scores associated with the models' independent variables. For example, in Panel D the logit estimation for element 6 produced a z-score of -2.64 for the variable measuring the percent of white students in a state. See Appendix and Table A1 for information on variables and full model results.

Table 2. Influence of state governance, capacity, politics, and conditions on 2003 NAEP achievement scores

	t-scores from OLS regression models			
Independent variables	**4th grade reading**	**8th grade reading**	**4th grade math**	**8th grade math**
Governance variables				
Governor appoints state education chief	1.50	1.42	1.43	0.99
Governor appoints state board of education	1.57	1.39	0.57	0.25
Capacity variables				
Quality of state standards and accountability	1.10	0.73	0.33	-0.41
% K-12 revenues from federal	-3.77	-2.20	-3.45	-2.21
% K-12 revenues from local	-1.09	-0.47	-0.86	0.08
Political variables				
Government is divided	-0.17	0.34	-0.73	-0.44
Governor is Republican	0.35	0.91	0.22	-0.07
Governor changed party in 2002 election	-1.73	-0.98	-0.52	-0.39
State characteristics variables				
% white students in state	4.36	5.07	3.22	4.20
% students on free/reduced lunch in state	-1.74	-1.26	-1.41	-1.52
% limited English proficient students in state	-0.47	-0.41	0.66	1.48
Model constant	30.43	38.15	32.43	28.01
Adjusted R-squared	0.64	0.62	0.45	0.48
F(11, 38)	8.73	8.17	4.60	5.11
N	(50)	(50)	(50)	(50)

Notes: The dependent variable in each ordinary least squares regression is the state NAEP scale score identified in the column heading. For all models, F-tests are associated with $p<.001$. Estimations run in Stata 8. See Appendix and Table A1 for variable details and information on full model results.

Table A1. Descriptive statistics

Variables	Mean	Stddev	Min	Max
Dependent variables				
Final policy on accountability element 1	.74	.44	0	1
Final policy on accountability element 2	.74	.44	0	1
Final policy on accountability element 3	.78	.42	0	1
Final policy on accountability element 4	.66	.48	0	1
Final policy on accountability element 5	.76	.43	0	1
Final policy on accountability element 6	.54	.50	0	1
Final policy on accountability element 7	.76	.43	0	1
Final policy on accountability element 8	.64	.48	0	1
Final policy on accountability element 9	.72	.45	0	1
Final policy on accountability element 10	.66	.48	0	1
Final policy on accountability element 11	.60	.49	0	1
Final policy on accountability element 12	.64	.48	0	1
Final policy on accountability element 13	.62	.49	0	1
Final policy on accountability element 14	.62	.49	0	1
Final policy on accountability element 15	.64	.48	0	1
Final policy on accountability element 16	.74	.44	0	1
Final policy on accountability element 17	.66	.48	0	1
Final policy on accountability element 18	.82	.39	0	1
Final policy on accountability element 19	.74	.44	0	1
Final policy on accountability element 20	.66	.48	0	1
Final policy on accountability element 21	.76	.43	0	1
Final policy on accountability element 22	.82	.39	0	1
Final policy on accountability element 23	.66	.48	0	1
Final policy on accountability element 24	.72	.45	0	1
Final policy on accountability element 25	.74	.44	0	1
Final policy on accountability element 26	.64	.48	0	1
Final policy on accountability element 27	.64	.48	0	1
Final policy on accountability element 28	.62	.49	0	1
Final policy on accountability element 29	.70	.46	0	1
Final policy on accountability element 30	.66	.48	0	1
Final policy on accountability element 31	.68	.47	0	1
NAEP 4th grade reading, 2003	218.02	6.46	203	228
NAEP 8th grade reading, 2003	262.86	5.94	251	273
NAEP 4th grade math, 2003	234.50	5.41	223	243
NAEP 8th grade math, 2003	277.44	7.45	261	291
Independent variables				
Governor appoints state education chief, 2002	.20	.40	0	1
Governor appoints state board of education, 2002	.48	.50	0	1
Quality of state standards and accountability, 2001	76.38	13.24	31	98
Percent of K-12 revenues from federal, 2000-01	7.97	2.72	3.94	15.76
Percent of K-12 revenues from local, 2000-01	39.98	12.75	1.79	66.33
Government is divided, 2002	.60	.49	0	1
Governor is Republican, 2002	.54	.50	0	1
Governor changed party in 2002 election	.40	.49	0	1
Percent of students who are white, 2001-02	68.96	17.61	20.31	96.20
Percent of students on free/reduced lunch, 2000-01	32.09	14.78	0	64.21
Percent of students with limited English, 2000-01	4.46	5.38	0	24.10

Note: N=50 for all variables. Source documentation for each variable appears in the Appendix.