



TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Obstacles to the Effective Implementation of Performance Funding: A Multistate Cross-Case Analysis

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Abstract

This paper examines the major obstacles that hinder higher education institutions from responding effectively to the demands of performance funding 2.0 programs, in which state appropriations tied to colleges' performance are embedded in base allocations rather than provided as a bonus. The authors interviewed administrators and faculty at 18 public higher education institutions (nine community colleges and nine universities) in three states with notable examples of performance funding 2.0 programs: Indiana, Ohio, and Tennessee.

Across the three states, public colleges and universities experienced the performance funding programs in different ways, but there is broad consensus on some factors that hinder institutions from responding effectively to the programs. Respondents at universities and community colleges indicated that among a large set of obstacles, student body composition, inappropriate performance funding measures, and insufficient institutional capacity most often made it difficult for their institutions to respond to performance funding. The authors draw on policy implementation theory and principal-agent theory to explain why the local response to performance funding programs may deviate in form and results from the directions intended by policy framers. They conclude by offering policy suggestions aimed at reducing the obstacles to performance funding implementation.

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1. Introduction

Since the 1970s, policymakers have become increasingly interested in improving the performance of higher education institutions. One way of potentially improving a college's performance is by tying state appropriations directly to a college's performance on indicators such as student retention, graduation, and job placement. This method, called performance funding, has become a popular strategy for pursuing improved performance (Burke, 2002, 2005; Dougherty & Reddy, 2013; Harnisch, 2011; Longanecker, 2012a, 2012b; Lumina Foundation, 2011; McLendon, Hearn, & Deaton, 2006; National Conference of State Legislatures, 2014; Reindl & Jones, 2012; Reindl & Reyna, 2011).

As with any policy, policymakers must be concerned with whether there are any obstacles that may hinder performance funding from being successfully implemented. A recent review of the literature on performance funding found that programs involving a bonus over and above regular base state funding—which we refer to as PF 1.0 programs, as they represent the earliest form of performance funding—have had little impact on student outcomes (Dougherty & Reddy, 2013; see also Tandberg & Hillman, 2014). That same review argued that that this lack of impacts could be traced in part to the fact that colleges encounter significant obstacles to being able to effectively respond to performance funding. A major question is whether those obstacles also apply to the PF 2.0 programs that many states have adopted in recent years, in which performance funding is embedded in the base state allocation rather than being given as a bonus.

This paper examines the major obstacles that hinder higher education institutions from responding effectively to PF 2.0 programs. To investigate this issue, we interviewed administrators and faculty at 18 public higher education institutions (nine community colleges and nine universities) in three states with notable examples of PF 2.0 programs: Indiana, Ohio, and Tennessee.¹ In the sections that follow, we first introduce the theoretical concepts that frame our analysis. We then discuss our main findings, which

¹ This analysis is one piece of a multipart project that investigated the implementation of PF 2.0 programs in Indiana, Ohio, and Tennessee. Other components of our study include analyses of the policy instruments used by performance funding programs (Reddy et al., 2014), processes for organizational learning within institutions (Jones et al., 2014), changes in institutional policies and programs in response to performance funding (Natow et al., 2014), and unintended impacts of performance funding (Lahr et al., 2014).

show that respondents most often mentioned obstacles related to student body composition, inappropriate performance funding metrics, and insufficient institutional capacity, among others. We then evaluate how perceptions of obstacles vary across states, types of institutions, and respondents' roles within their institutions. We conclude by summarizing our findings, placing them in the context of the theories used to guide our research, and identifying concerns for policymakers.

2. Background and Theoretical Perspectives

In order to understand the obstacles that performance funding for higher education may encounter in implementation, we draw from the research literature on performance funding implementation and impacts, performance management in government agencies, policy implementation theory, and principal-agent theory.

2.1 Performance Funding in Higher Education

A good number of studies have documented, if only in passing, various implementation obstacles that performance funding programs encounter. Dougherty and Reddy (2013) reviewed this literature and found widespread evidence that performance funding programs encounter a broad range of impediments: the use of inappropriate performance measures; instability in funding, indicators, and measures; the brief duration of many performance funding programs; performance funding levels that are too low; shortfalls in regular state funding for higher education; inequalities in institutional capacity; unequal distribution of knowledge and expertise about performance funding within institutions; and resistance and “game-playing” by institutions.

Unfortunately, the studies reviewed by Dougherty and Reddy (2013) do not provide a careful and sustained analysis of how the obstacles cited vary by state, institution type, and position of the respondent. Moreover, those studies are not strongly rooted in organizational theory. Our study therefore extends the literature on performance funding by incorporating theoretical perspectives from implementation theory and principal-agent theory that can further illuminate the nature of the obstacles identified.

2.2 Performance Management in Government Agencies

It is clear that the patterns discovered so far in the study of performance funding in higher education are part of a more general pattern. Many of the obstacles identified in the performance funding literature also appear in studies of performance management in K-12 education and government agencies (Forsythe, 2001; Heinrich & Marschke, 2010; Moynihan, 2008; Radin, 2006; Rothstein, 2008). Moynihan (2008, p. 5) provides a useful definition of performance management: “a system that generates performance information through strategic planning and performance measurement routines and that connects this information to decision venues.”

Moynihan identifies several obstacles encountered by performance management programs. These include lack of resources on the part of target agencies and difficulty coping with rapid changes in state performance indicators (Moynihan, 2008, pp. 91, 110). But the most fundamental obstacle is the difficulties agencies encounter in interpreting and evaluating the data they collect and devising solutions to the problems they discover (Moynihan, 2008, pp. 104–105, 113, 178–179). Those difficulties are in turn rooted in a lack of forums for discussing problems and possible solutions, and in the absence of an organizational culture that promotes non-defensive responses to organizational problems (Moynihan, 2008, pp. 167, 178–185). Other studies have identified another obstacle: gaming by the organizational targets of performance management. This occurs when agencies generate deceptive performance measures (for example, through teaching to the test) in order to create the appearance that they are meeting performance expectations when they may not in actuality be doing so (de Bruijn, 2002, pp. 21, 23–32; Grizzle, 2002, pp. 363–365; Radin, 2006, pp. 17–19). To gain a theoretical purchase on these obstacles, we turn to studies on policy implementation and principal-agent relations in higher education.

2.3 Policy Implementation Theory

Research on the implementation of all kinds of public policies has emerged from a desire to explain why policies as implemented or enforced are often at variance with the goals of the policy framers (Honig, 2006; Matland, 1995; Mazmanian & Sabatier, 1989; Pressman & Wildavsky, 1973). One of the central divides in the literature on policy

implementation has been between a perspective that emphasizes the intentions and actions of policy designers and one that stresses the views and reactions of the target populations and the “street-level bureaucrats” who deliver services to those target populations. The first perspective, which has been dubbed the “top-down perspective,” dominated the first wave of policy studies. The second perspective has been dubbed the “bottom-up” perspective and has dominated later waves of policy implementation studies (Honig, 2006; Matland, 1995; Mazmanian & Sabatier, 1989; Smith & Larimer, 2009).

The top-down perspective. The top-down perspective dominated the early years of policy implementation studies. Its focus is on why local instantiations of national programs often deviate in form and results from the directions intended by policy framers in Washington. One factor often pointed to was lack of knowledge on the part of local actors about the aims of the policy, in good part because policy framers left the goals of the policy too ambiguous and failed to communicate those goals and associated rules effectively (Matland, 1995, pp. 157, 161; Mazmanian & Sabatier, 1989, p. 41; Smith & Larimer, 2009, pp. 158–162). Another frequent explanation was lack of capacity at the local level to respond to the policy, be it a lack of expertise or lack of money and organizational resources (Honig, 2006, pp. 5–6; Matland, 1995, p. 161; Mazmanian & Sabatier, 1989, p. 41). For example, an analysis of the implementation of No Child Left Behind pointed to the budget limitations encountered by states and the lack of expertise of many states and local school districts in the psychometric techniques needed to develop state assessments (Sunderman & Kim, 2007, pp. 1072, 1077). A third explanation from the top-down perspective focuses on lack of will or good intent on the part of the immediate implementers (Honig, 2006, pp. 5–6; Mazmanian & Sabatier, 1989, p. 41). For example, former Secretary of Education Rod Paige accused some states of trying to game their No Child Left Behind plans (Sunderman & Kim, 2007, p. 1067). This concern about the motivations of bottom-level implementers (so-called “street-level bureaucrats”) touches on the interest of the bottom-up perspective in implementation research in the perceptions and motivations of the direct implementers.

The bottom-up perspective. The bottom-up perspective arose in reaction to the emphases of the top-down perspective. It stresses the importance of understanding the distinct knowledge, goals, strategies, and activities of local actors. It sees local actors not

as ignorant, incompetent, or lacking in good intent but rather as carriers of different goals and understandings. In fact, local divergence from the goals and vision of national policy framers is not viewed as implementation failure but rather as mutual adaptation, as local implementers attempt to reconcile macro-level demands with micro-level conditions (Honig, 2006, pp. 6–7; Matland, 1995, pp. 148–149; Smith & Larimer, 2009, pp. 162–169). Bottom-up theorists also argue that local implementers may do things differently than policy framers intended because they have different goals. For example, while policy framers may be particularly concerned with organizational efficiency and push merit pay as a solution, local school administrators and teachers may be more concerned about maintaining comity among teachers and therefore prefer common, step-level increments in pay (Loeb & McEwan, 2006, pp. 174–176). The bottom-up perspective also emphasizes that, even when local actors share the same goals as policy framers, they may have different understandings of what those goals entail. Also, local actors may misunderstand new ideas as being the same as ones they are already familiar with. These differences in understanding arise from different cognitive schema rooted in different organizational, professional, and other cultures (Coburn & Stein, 2006, pp. 25–27; Honig, 2006, pp. 16–18; McLaughlin, 2006, pp. 214–215; Spillane, Reiser, & Gomez, 2006, pp. 49–59).

The top-down and bottom-up perspectives should not be seen as mutually exclusive (Matland, 1995; Mazmanian & Sabatier, 1989; Sabatier, 1986). Each highlights different obstacles that can get in the way of the implementation of a policy. The top-down perspective helps us spot obstacles that arise from inadequacies in the actions taken by policy framers, whether they fail to communicate their goals well or fail to build up the expertise and organizational capacity of local implementers. Meanwhile, the bottom-up perspective alerts us to obstacles that arise from differences between the goals and understandings of policy framers and local implementers. A key obstacle it will point to is resistance on the part of local implementers based on different understandings and values. For instance, local implementers may critique the validity of the indicators being used by state officials to drive performance funding.

2.4 Principal-Agent Theory

In addition to using top-down and bottom-up theoretical frameworks, we also draw on principal-agent theory to explore the important role financial incentives play in the implementation of performance funding (Lane & Kivisto, 2008; Miller, 2005; Moe, 1984). Originally from the field of economics, principal-agent theory has also become a major theoretical instrument in political science. Thus, the theory has several variations, but at its core, it focuses on how principals can ensure the compliance of their agents, and it holds that while principals and agents do cooperate, they also have separate and often opposing interests that may lead agents to act in ways counter to the interests of principals. As a result, principals must take steps to secure agents' compliance. The first-order step is to specify a more or less explicit contract or agreement, but that agreement must be backed up by oversight, incentives, and, if needed, sanctions. The perennial difficulty with oversight is information asymmetry: Agents often have specialized knowledge that principals do not; thus, it is not always easy to determine if agents are working as hard and as well as principals might want (Lane & Kivisto, 2008; Miller, 2005; Moe, 1984).

Depending on the discipline, the application of principal-agent theory varies quite substantially. Principal-agent theory in economics sees the relationship between the principal and agent as primarily between unitary actors who are motivated by economic self-interest and bound by an explicit contract. Here, any "shirking" by the agent is purposeful and self-interested. In contrast, principal-agent theory in political science allows for multiple principals (such as different regulatory agencies) and even agents. Implicit contracts and definitions of the social good, and not just self-interest, motivate agents to respond to principal requests. Further, principal responses might also involve appeals to shared values (see Lane & Kivisto, 2008, pp. 150–154). The political science conceptualization better fits the situation of public governance of higher education institutions because (1) the contract between public higher education and government is often implicit; (2) higher education institutions are regulated and otherwise influenced by a host of different principals (including governors, legislators, higher education boards, accrediting and professional associations, students and parents, employers, etc.); and, (3) those institutions are influenced not just by resource flows from principals but also by

principals' appeals to shared social and professional values (see Lane, 2007; Lane & Kivisto, 2008).

We find that principal-agent theory is highly compatible with policy implementation theory (Mazmanian & Sabatier, 1989). Akin to the top-down perspective in policy implementation, principal-agent theory points to the interest of the principal, in this case the state, in securing compliant behavioral changes in higher education institutions, and its use of monetary incentives to do so. However, to the degree that principal-agent theory (particularly its political science variant) acknowledges conflicting interests and values, it also resonates with the bottom-up perspective. The agents at the institutional levels may resist the demands of the principals because they hold interests and values that conflict with those of the principals.

2.5 Overall Conceptual Framework

When we pull together these various empirical and theoretical strands, they suggest that we view the obstacles to performance funding in higher education as part of a more general pattern of accountability systems for government agencies. Moreover, they suggest that we view these obstacles from both a top-down and a bottom-up perspective—that is, as arising on the one hand from inadequacies of communication, expertise, and resources and on the other from differences in understandings, goals, and even interests within a higher education policy subsystem conceived of as a political system with value and power conflicts. Additionally, since the levers of change are rooted in more than just financial incentives, we must consider how states transmit their messages and how local actors interpret these messages through the filters of their own values. Hence, it is important that we carefully examine the perspectives of both policy framers and local implementers and that, even among local implementers, we attend to finer divisions of understanding and interest among administrators and faculty at different kinds of institutions.

3. Research Methods

This study investigates the main obstacles public institutions encountered in effectively responding to the demands of state performance funding programs, as perceived by respondents at those institutions. We interviewed administrators and faculty at 18 public higher education institutions (nine community colleges and nine universities) in three states: Indiana, Ohio, and Tennessee. In this section, we address why we chose these states and types of institutions, who our interviewees were, and how we collected and analyzed our data.

3.1 Selection of the States

The performance funding programs in Indiana, Ohio, and Tennessee have attracted considerable attention as leading examples of the new PF 2.0 programs that have appeared in the last decade. These programs embed performance funding indicators in base state funding for public higher education rather than providing it as a bonus (Dougherty & Natow, in press; Dougherty & Reddy, 2013).

Notwithstanding their shared prominence, the three states in our study differ quite a bit in terms of their experiences with performance funding and in their political and socioeconomic structures (see Appendix A). Tennessee was the first state to establish a PF 1.0 program (involving a bonus over and above regular base state funding) in 1979, while Ohio adopted a PF 1.0 program in 1995 and Indiana in 2007. In 2009, Ohio and Indiana adopted PF 2.0 programs, and Tennessee followed in 2010. While all three states now have PF 2.0 programs, each state allocates different amounts of funding to the policy. For instance, Ohio and Tennessee allocate 80–90 percent of their appropriations for public higher education institutions on the basis of performance indicators, compared with 6 percent for Indiana (see Appendix B).

The states also differ in how they govern their public higher education systems. Indiana and Tennessee have more centralized public systems than does Ohio. Indiana places all but one of its community college campuses under one governing board, whereas the Ohio community colleges all have separate governing boards (McGuinness, 2003). In addition, the political cultures and governmental structures of the states also differ (Berry & Berry, 2007; Gray, Hanson, & Kousser, 2013). Tennessee and Indiana are

above average in the conservatism of their electorates, while Ohio is very near the national average (Erikson, Wright, & McIver, 2005). Ohio is well above the mean in the institutional powers of its governor, whereas Tennessee is well below (Ferguson, 2013). On legislative professionalism, Ohio's legislature rates much higher than those of Tennessee and Indiana (Hamm & Moncrief, 2013). The states also differ in degree of party competition, with Ohio and Tennessee being more competitive than Indiana (Holbrook & La Raja, 2013).

Finally, the states differ considerably in their social characteristics: population, income, and education. Ohio's population is larger, wealthier, and better educated than those of Indiana and Tennessee (see Appendix A).

3.2 Selection of the Institutions

This study examines the experiences of 18 public higher education institutions with performance funding: nine community colleges and nine universities. The institutions were selected based on differences in their expected capacity to respond to performance funding. Using 2011 data from the Integrated Postsecondary Education Data System (IPEDS), we measured expected capacity based on college resources (revenues per full-time equivalent student), data-analytic capacity (as rated by two experts in each state), and proportion of disadvantaged students (percentage of students receiving Pell Grants and percentage of racial/ethnic minority students). We rated the community colleges as being in the top, middle, and bottom third on each of these three dimensions, summed the ratings, and picked one college in each state from each group. We have labeled these colleges as "high-," "medium-," or "low-capacity." For the public universities, we selected two non-research-intensive universities that were high and low in their expected capacity to respond to performance funding, using the same capacity measure as for the community colleges. We labeled these universities as "high 2" or "low." The third university in each state is a high-capacity, research-intensive institution that we labeled as "high 1."

3.3 Data Collection and Analysis

We conducted phone interviews with institutional administrators and faculty in all three of our states to collect information on how their institution experienced their state's

performance funding policy. In total, we interviewed 110 community college respondents and 112 university respondents between fall 2011 and fall 2013 (see Table 1).

Respondents included senior administrators (the president and the vice presidents reporting to the president), mid-level academic administrators (deans), mid-level nonacademic administrators (e.g., director of institutional research), and faculty (department chairs and chair of the faculty senate) representing a range of disciplines and degrees of exposure to outside accountability demands. We relied on the department chairs and the chair of the faculty senate to illuminate faculty opinion. Where appropriate, we also drew on documentary sources, such as public agency reports, newspaper articles, and academic research studies (books, journal articles, and doctoral dissertations) to supplement our findings.

Table 1
Interview Participants

Participants	IN	OH	TN	Total
Community college				
Senior administrators	10	16	12	38
Mid-level administrators—Nonacademic	5	4	10	19
Mid-level administrators—Academic	11	5	10	26
Faculty	8	13	6	27
Subtotal	34	38	38	110
University				
Senior administrators	15	16	11	42
Mid-level administrators—Nonacademic	4	3	9	16
Mid-level administrators—Academic	6	9	6	21
Faculty	12	13	8	33
Subtotal	37	41	34	112
Total	71	79	72	222

The interviews were semi-structured and lasted approximately one to two hours. While we used a standard protocol, we adapted it to each interviewee and to material that emerged during the interview. All interviewees were promised confidentiality, and we have masked their identities.

The interviews were transcribed, entered into the Atlas.ti qualitative data analysis software system, and coded. We also coded documentary materials if they were in a format that allowed it. Our coding scheme began with an initial list of “start” codes drawn from our conceptual framework, but we added and altered codes as necessary as we proceeded with data collection and analysis.

To analyze the data, we ran queries in Atlas based on our key coding categories. Using this output, we created analytic tables comparing how different interviewees at different kinds of institutions perceived the obstacles to effectively responding to state performance funding demands. To account for the intensity of an obstacle, we counted the number of interviewees mentioning it, and to get a sense of its scope, we counted the number of institutions those interviewees represented. We emphasize the term “effectively respond” in order to acknowledge that some institutions, in order to avoid losing performance funding money, might resort to actions that do produce the outcomes intended by policy designers but do so in a way that also produces unintended outcomes, such as a weakening of academic standards.

We begin our analysis by examining the main patterns that hold across our data as a whole. Later, we examine differences between states, earlier and later programs within a state, types of institutions (community colleges and universities; high-, medium-, and low-capacity institutions), and the institutional positions of our interviewees.

4. Main Patterns

Public colleges and universities experienced the performance funding programs in different ways, but there is broad consensus on some factors that hinder institutions from responding effectively to the programs. Respondents at universities and community colleges indicated that student body composition, inappropriate performance funding measures, insufficient institutional capacity, institutional resistance, inadequate state

funding of higher education, and insufficient knowledge of performance funding most often made it difficult for the institution to respond to the demands of the performance funding formula. We caution that while many of our respondents were aware of performance funding, they often did not have a good understanding of the details of the formula. In fact, one of the important obstacles to successful implementation was insufficient knowledge of the performance funding program (for further discussion, see Reddy et al., 2014).

The following sections elaborate on the most frequently mentioned obstacles (obstacles with 30 or more reports), as summarized in Table 2 below. The figures reported are for the 2009 program in Indiana, the 2009 program and its 2013 revision in Ohio, and the 1979 and 2010 programs in Tennessee (see Appendix B for details on these programs).

Table 2
Summary of Perceived Obstacles to Performance Funding Effectiveness in Three States

Obstacle	Number of Individuals Mentioning	Number of Community Colleges with Mentions (Out of 9)	Number of Universities with Mentions (Out of 9)
Student body composition	63	9	7
Inappropriate performance funding measures	61	9	8
Insufficient institutional capacity	42	8	6
Institutional resistance	38	8	7
Insufficient state funding of higher education	36	7	7
Insufficient knowledge of performance funding	30	8	5
Instability in funding, indicators, and measures	21	5	4
Insufficient state funding of performance funding	8	2	6
Decrease in enrollment	4	3	1
Other	12	3	6
Total number of unduplicated respondents reporting	186		
Total number of reports	315		

4.1 Student Body Composition

University and community college respondents widely reported that features of their institution’s student body composition inhibited its ability to improve on the state performance funding indicators (see Table 3). Perceived obstacles related to student body composition include the following: a high number of students who were not prepared for college-level coursework, were not seeking degrees, were from low-income families or were struggling financially, were afraid of debt or the financial burden of higher education, were only attending part-time, or were resistant to higher education. In the discussion below, we focus on the top three obstacles related to student body composition.

Table 3
Reports of Student Body Composition as an Obstacle

Obstacle	Number of Individuals at Community Colleges	Number of Individuals at Universities	Total Number of Individuals Mentioning	Number of Community Colleges with Mentions (Out of 9)	Number of Universities with Mentions (Out of 9)
Unprepared students	17	3	20	7	3
Non-degree seekers	16	1	17	8	1
Low-SES students	12	0	12	4	0
Fear of debt/financial burden	1	6	7	1	5
Part-time status	3	2	5	2	1
Resistance to higher education	2	0	2	2	0
Total number of unduplicated respondents reporting	51	12	63	9	7
Total number of reports	61	14	75		

Note. SES = socioeconomic status. The total number of unduplicated respondents reporting is the number of respondents who mentioned one or more obstacles related to student body composition. It is lower than the total number of reports because some respondents mentioned more than one obstacle.

Inadequate preparation for college. Across the institutions, we received many reports that students were not academically prepared to do college-level coursework and that this interfered with the capacity of institutions to respond effectively to performance funding.² An Ohio community college dean noted:

I think our student population comes in incredibly unprepared and without the foundational skills, without what would be considered college-level reading, writing, and comprehension. So quite honestly ... they just don't have the skills—whether it be that they never learned how to study in high school, whether it be they got passed through high school—but they just don't know how to attack college and the level of work that's required in a college class.

A senior administrator at a community college in Indiana echoed this concern:

There's huge numbers of students coming to us and sometimes scoring a 12 on the ACT, for example. It's almost impossible to remediate someone when they come to us as an adult and they're lacking skills to that level.

University respondents were also concerned with student preparation, though less often than community colleges respondents were. A Tennessee university senior administrator illustrated this concern about the level of preparedness of students entering college:

We're constrained in many ways by the products coming out of the high schools. ... I mean, it's scary stuff, to think that we're somehow going to be able to take a student coming of some of these high schools and do what we're supposed to do, and what we need to do.

This concern that having many academically unprepared students would hinder institutions' performance on state metrics is not surprising. Existing research suggests that almost half of students nationally who enter college require remediation in either math or English and that those who are placed in remediation are much less likely to ever earn a credential (Bailey, Jeong, & Cho, 2010; Hodara, 2013). Having many students who are

² Authors' interviews IN CC1 #3, 5, 10; IN CC3 #7; IN Univ3 #4; OH CC1 #4, 9, 15, 16; OH CC2 #7; OH CC3 #3, 13, 14; OH Univ3 #5; TN CC1 #8; TN CC3 #3, 4, 9, 11; TN Univ3 #7.

not prepared for college-level work makes it hard for institutions to post higher graduation numbers, which are a major indicator in the performance funding programs in all three states. Not surprisingly, our institutions, particularly community colleges, were making major efforts to improve their delivery of remedial education (see Natow et al., 2014).

Non-degree seekers. Performance funding programs put a lot of emphasis on successful graduation. Yet, many of our respondents, particularly at community colleges, pointed out that a sizable number of their students do not plan to complete a certificate or degree.³ In fact, among two-year college entrants surveyed in their first year as part of the 2003–04 Beginning Postsecondary Students survey, 16 percent stated that they had no plans to secure a degree or certificate (Berkner & Choy, 2008, p. 7).

Sometimes, the issue was that students were experimenting with education and had not decided on a degree. Sometimes, they wanted vocational training that did not require a certificate or degree. A senior community college administrator in Tennessee said:

Someone might decide that at their particular job, it would really help them if they took the beginning course of accounting. They might just take that one course; that's all they need. That's the difficulty in a community college, is assuming that everyone who comes here will get an associate's degree. ... Another example is, we get students who are going to university, and they're home for the summer, and they just want to pick up one class. I just [find] the funding formula totally misses the purpose of a community college.

Sometimes, the issue was that students wanted a baccalaureate degree but not an associate degree. If the state performance funding program did not reward community colleges for the number of students who transfer to a four-year institution whether or not they get an associate degree, as was the case in Indiana, the college would not be fully rewarded for successfully preparing students for transfer.⁴ A community college faculty member from Indiana noted:

³ Authors' interviews with mentions of lack of degree aspirations: IN CC1 #1, 4, 6; IN CC2 #13; IN Univ2 #10; OH CC1 #7; OH CC2 #6, 12; OH CC3 #15; TN CC1 #2, 3, 4, 10, 11; TN CC2 #4, 12; TN CC3 #13.

⁴ A college would get partial funding, insofar as students do accrue certain numbers of credits (Indiana Commission for Higher Education, 2013a).

Some of our students will transfer to a four-year. We have a lot of those that are happening, because it's cheaper to come here to get your gen. eds. out of the way and then go to your four-year. I think they should take that into consideration, especially since ... the formula is based on that, on completion.

Lower socioeconomic status (SES) and the financial burden of attending college. Another student body composition feature that respondents frequently perceived to be an obstacle is closely related to inadequate preparation for college-level work. Numerous respondents at both community colleges and universities that serve a high percentage of low-income students identified this as a major obstacle to their institutions' doing well on the state performance funding formula.⁵ These students are less likely to meet college-readiness standards in comparison to their higher income peers. A senior administrator at an Indiana community college pointed out how traditionally underserved students often are not academically well prepared:

A lot of our Pell Grant students are first-generation students, or they're low-income students, or they're minority students. Some of them come in the door at a disadvantage, and they may need remediation, or they don't understand what the rigors of college are, or they've had bad experiences academically in the past that really has shaken their self-confidence. So, I see a lot of these students come in my door. They're frustrated. They're upset. They don't understand what it means to go to college.

In addition, low-income students are more likely to encounter other obstacles to graduation, such as insufficient social or economic support structures (ACT, 2012; Astin & Oseguera, 2005; Bailey & Dynarski, 2011). University respondents frequently suggested that fear of accumulating debt or taking out loans prevented some students from persisting in higher education (Authors' interviews IN Univ2 #7; IN Univ3 #9, 13; OH Univ1 #5; OH Univ2 #11; TN Univ1 #10; as well as TN CC2 #3). Also, our respondents said that inadequate financial aid made it difficult for low-SES students to cover the costs of higher education, including tuition, transportation, books, and living

⁵ Authors' interviews with mentions of low SES: IN CC2 #3, 10, 14; IN CC3# 1, 8; OH CC3 #7, 11; TN CC3 #2, 5, 6, 10, 14.

expenses. As a result, they more often have to work while enrolled, and this impedes their completion (Authors' interviews IN CC2 #10, OH CC1 #15, TN CC2 #3, TN CC3 #9, TN Univ1 #2). From a university senior administrator in Tennessee, we heard:

It may be harder to move a first-generation college student who is working three jobs through the program as effectively as someone ... who's not a first-generation college student and who has the financial means to be able to attend college by working one part-time job or something.

Indeed, state policy designers were aware that colleges and universities with high numbers of students who were poorly prepared, coming from low-income families, not intending to get a degree, or attending part-time would have a more difficult time retaining and graduating students than institutions with better prepared and more advantaged student bodies (Dougherty et al., 2014). Hence, policy designers introduced additional mechanisms to protect colleges from suffering a financial disadvantage by admitting at-risk students. Indiana has a completion indicator specifically targeted to low-income students. Ohio weights course and degree completions for the university main and regional campuses by whether students are at risk, defined in terms of varying combinations of family income, race/ethnicity, and age. Moreover, the state plans to do the same for community colleges by fiscal year (FY) 2016. And Tennessee has extra weighting for adult learners and low-income students on indicators for credit accumulation and degree production (Indiana Commission for Higher Education, 2013b; Ohio Board of Regents, 2013a, 2013b; Tennessee Higher Education Commission, 2012b, 2014a).

These premiums can have a considerable impact on institutional allocations. In Tennessee, they can shift institutional allocations by as much as 12 percent, with an average of about 4 percent. For example, a senior administrator at an Indiana university observed:

Our share or position in the performance funding has been at least in the positive, and part of that is gradually we're doing better with overall completion rates, but also with something like three quarters of our students having high levels of need when we graduate them. Yes, that pays off for us.

However, senior administrators at several other institutions—particularly community colleges in Indiana and Ohio—were more dismissive of the usefulness of the premium for

supporting disadvantaged students. These actors called for more help from the state government (Authors' interviews IN CC1 #4; IN CC2 #10; IN Univ3 #1; OH CC1 #1; OH CC3 #2). For example, on the subject of the graduation indicator giving greater weighting for disadvantaged students, a senior administrator at an Indiana community college stated:

Well, I think it helps some. I think that it could help more. I mean, again, these are, a lot of these are first-generation college students. If we had additional funding, I think that there are some ways that we could help them more.

The widespread institutional concern about the difficulties posed by having many at-risk students points to a need for providing such institutions with more help in coping with these challenges. We will return to this issue in the summary and conclusion to this report.

4.2 Inappropriate Performance Funding Measures

The second most commonly reported general obstacle was that performance funding measures did not always accord well with institutional missions, making it difficult for institutions to perform well on the state metrics. Many administrators and faculty mentioned that the different performance funding indicators and their measures did not fully capture the performance of their institutions (see Table 4).

Table 4
Reports of Inappropriate Performance Funding Measures as an Obstacle

Obstacle	Number of Individuals at Community Colleges	Number of Individuals at Universities	Total Number of Individuals Mentioning	Number of Community Colleges with Mentions (Out of 9)	Number of Universities with Mentions (Out of 9)
Metrics do not align with institution's mission or characteristics	24	30	54	8	8
Ceiling effect for universities	0	7	7	0	4
Total number of unduplicated respondents reporting	24	37	61	9	8
Total number of reports	25	40	65		

Note. The total number of unduplicated respondents reporting is the number of respondents who mentioned one or more obstacles related to inappropriate measures. It is lower than the total number of reports because some respondents mentioned more than one obstacle.

Respondents at community colleges often perceived the state metrics as unrealistically holding them to the same standards as four-year colleges.⁶ The common perception was that the performance funding formulas treated community college students like university students, even though their goals and other characteristics are frequently not the same. While a significant number of students at community colleges do not intend on getting a certificate or degree, this is true of a much smaller number of four-year university entrants. Among students entering higher education in academic year 2003–2004 and surveyed that year as part of the Beginning Postsecondary Students Longitudinal Study, 16 percent of two-year entrants but only 6 percent of four-year entrants stated that they did not intend to earn a certificate or degree (Berkner & Choy, 2008, p. 7; see also Hoachlander, Sikora, & Horn, 2003). From a high-level community college administrator in Tennessee, we heard:

I think all of our sister institutions that are community colleges will be experiencing something very similar. ... The students that come to community college may not all be intending to earn an associate's degree. They may be coming to upgrade some of their skills as incumbent workers. There may be some students that are coming back to retool in certain areas. So a completion agenda may not always be first and foremost for a community college student the same way it would be for a four-year university student.

Similarly, a senior community college administrator in Indiana noted that community college students tend to have different life circumstances:

The state [is] not understanding the mission of the community college, as compared to four-year universities. And they evaluate us on the same plane, or they try to. For example, people in a community college have a different mission. They may be married, they may be working, and they may be laid off. ... It could be all of those things in life that can screw you up. Now, why is that different than a four-year college? Because a four-year college has more of a captive audience when they walk in the door. You have a group of freshmen who are going to enter this year; they are all out of high school. ... We should not be judged the same.

⁶ Authors' interviews IN CC1 #8; IN CC2 #3, 10, 14, 18; IN CC3 #1; OH CC1 #4, 8, 15; OH CC2 #4, 7; TN CC1# 4, 10; TN CC2 #6; TN CC3 #7,8.

Some university respondents, particularly at broad-access institutions, also thought the performance funding formula relied on inappropriate measures to gauge improvement (Authors' interviews IN Univ2 #2, 3, 4, 11, 12, 13; OH Univ2 #7, 12, 13, 14, 16; TN Univ3 #8, 9, 10). These university respondents explained that their students were less academically prepared and that their institution's progress could not be compared without qualification to that of selective, high-capacity universities. For example, a faculty member at an Indiana university stated:

I think it's a one-size-fits-all model. And the problem with that is that each of the state institutions serves a different student population. So, you know, in our case, I think that the students that get missed are the nontraditional students. At our institution, they're the ones that may take five, six, or seven years to complete their degree, because they're working, or they don't have the financial aid to do the types of things they need to do to be a full-time student.

In contrast, some respondents at high-capacity universities, particularly in Indiana, were frustrated because they felt they had little room to improve and therefore could not achieve large gains. For these institutions, there was a ceiling effect on the amount of funds they could earn for improvement (Authors' interviews IN Univ2 # 1, 5; IN Univ1 #4, 9, 12; OH Univ1 #2). One senior administrator in Indiana captures well the sentiment of others at high-capacity institutions:

In setting the measures, it doesn't take into account or reward when a campus is doing very well. ... [Name of Institution] scored a grand total of a quarter of a million dollars for having an increase in numbers of students completing in four years. [But the University of Indiana at] Bloomington has one of the, if not the highest, one of the highest completion rates in the state. It's a very good place. They have good students who are full-time, and they are doing very well. Bloomington got exactly zero. ... It only rewards change in the positive direction. What if you achieve some positive things and stay there? It doesn't do anything there.

In sum, a good number of respondents felt that some of the metrics did not fit well with the mission and student body composition of their institution. For those at community colleges and broad-access universities, the issue was that the state metrics did

not sufficiently address the fact that a significant number of their students did not intend to get a degree or faced economic and social obstacles that would make it hard to do so. For those at selective universities, the issue was that the performance metrics rewarded improvements, and it would be difficult to produce even higher graduation numbers when they were already performing at a high level.

State policy designers were also aware of the importance of matching performance funding indicators and measures to institutional missions (Dougherty et al., 2014). Consequently, the performance funding metrics have been rather different for universities and community colleges, particularly in Ohio and Tennessee. In the cases of Ohio and Tennessee, the metrics for universities and community colleges overlap on some indicators, but for the most part, the indicators are different. For example, in both states, the performance indicators for community colleges include completion of developmental education and attainment of certificates. In addition, Tennessee further differentiates its metrics by giving them different weights based on an institution's Carnegie classification (Dougherty et al., 2014; Indiana Commission for Higher Education, 2013b; Ohio Board of Regents, 2013a, 2013b; Tennessee Higher Education Commission, 2012b, 2014a). Still, the comments above from our respondents indicate that the states need to do more to tailor performance funding indicators to the circumstances of students entering community colleges and broad-access universities. We discuss possible actions policymakers could take in the summary and conclusion of this paper.

4.3 Insufficient Institutional Capacity

Research on policy implementation highlights the role capacity-building plays in successful policy implementation (Honig, 2006, pp. 5–6; Matland, 1995, p. 161; Mazmanian & Sabatier, 1989, p. 41). We had many reports that institutions' capacity to respond to performance funding was an issue. Table 5 summarizes all the perceived obstacles reported to us. Inadequate capacity for institutional research (IR) leads the list, perhaps because we asked our respondents specifically whether their institutions had sufficient IR or information technology (IT) capacity to support improvement. Previous research had identified insufficient IR capacity as a barrier to institutions' ability to collect, analyze, and disseminate important information related to gains (Dougherty & Reddy, 2013).

Table 5
Reports of Insufficient Institutional Capacity as an Obstacle

Obstacle	Number of Individuals at Community Colleges	Number of Individuals at Universities	Total Number of Individuals Mentioning	Number of Community Colleges with Mentions (out of 9)	Number of Universities with Mentions (out of 9)
Inadequate IR	11	8	19	7	5
Shortage of staff/faculty	4	2	6	3	2
Small institution	5	0	5	2	0
Limited student services	3	0	3	2	1
Inadequate IT	1	1	2	1	1
Too much to respond to	1	1	2	1	2
Need more time to make changes	1	1	2	2	0
Other	1	2	3	3	1
Total number of unduplicated respondents reporting	27	15	42	8	6
Total number of reports	33	15	48		

Note. The total number of unduplicated respondents reporting is the number of respondents who mentioned one or more obstacles related to institutional capacity. It is lower than the total number of reports because some respondents mentioned more than one obstacle.

Nineteen individuals at seven community colleges and five universities reported too little IR capability as an obstacle to effectively responding to the performance funding program.⁷ A Tennessee community college dean noted:

Any time you talk about implementing any programs or additional assessment ... anything of that nature ... [it] requires resources. And our IR department is woefully understaffed ...

At an Ohio university, a faculty member said he analyzed student outcomes data himself because the university did not have enough time to collect and analyze the data:

We've gotten permission from the registrar to generate our own data to help look at more complex questions about preparation, about prereqs, about placement scores, about

⁷ Authors' interviews IN CC1 #1; IN CC2 #17; IN CC3 #9; OH CC2 #9; OH CC3 #13; OH Univ1 #11; OH Univ2 #5, 13, 14; OH Univ3 #4, 9; TN CC1 #2, 3, 4, 7, 9; TN CC2 #6; TN Univ1 #3; TN Univ3 #3.

performance in the next course. I have to do that all myself, and I have no support from the university to help try to get a feel for these kinds of issues. Yet I do it because we have to increase our graduation rates. We have to increase our retention rates, and if we can get students not to have to take a math class a second or third time, then that will have ramifications. [*Q: So you feel a lot of pressure to improve your rates, and in order to do that, you need the data, but for you to get the data, you have to basically do the analyses?*] Right, because our IR office does not have the time or the personnel to do that.

In Indiana, a dean at a community college shared with us that it was very difficult to keep track of students who go on to four-year colleges, making it hard for community colleges to know whether they are succeeding in terms of advancing their students, and whether they are eligible for performance funding rewards: “We’ve had trouble tracking students who go on to a four-year school. It’s hard for us to get solid numbers.”

Aside from insufficient IR capacity, we heard as well about other aspects of insufficient capacity, including inadequate IT, a shortage of qualified staff and faculty, limited student services, small institutional size, and inability to perform additional tasks necessary to improve in the time allotted.⁸ The institutions that reported obstacles involving the size of their institution or shortage of qualified staff and faculty very often were in rural locations, where recruiting strong and competitive faculty proved difficult.

Other research we have conducted suggests that states did little to anticipate and mitigate institutional needs for greater capacity to respond to performance funding (Dougherty et al., 2014; Reddy et al., 2014). The states—with Ohio being a partial exception—did not carefully envision the organizational learning and other demands colleges would face in responding to performance funding and determine what kinds of capacity-building assistance they would require. The states did make some effort to foster discussions among institutions about best practices in academic and student support

⁸ Authors’ interviews with mentions of inadequate IT: OH CC2 #3; TN Univ3 #5. Authors’ interviews with mentions of staff/faculty shortages: IN CC1 #10; IN CC3 #10; OH CC3 #5, 7; TN Univ2 #11; TN Univ3 #10. Authors’ interviews with mentions of lack of or limited student services: IN CC2 #10; OH CC2 #5, 12. Authors’ interviews with mentions of the need for more time to make changes: IN CC3 #6; OH Univ1 #8. Authors’ interviews with mentions of small institution: IN CC3 #3; OH CC3 #9; TN CC3 #5, 7, 8. Authors’ interviews with mentions of too much to respond to: OH CC2 #2; OH Univ1 #14.

policies. However, with the partial exception of Ohio, we found no evidence of dedicated state efforts to build up the IR and IT capacity of institutions. Ohio officials did take steps to create a state data infrastructure that would relieve the colleges from much of the burden of collecting and analyzing their data (Dougherty et al., 2014). However, none of the three states provided funding or technical assistance to allow colleges to enlarge their IR and IT capacities and improve their understanding of how to use data analysis and organizational reflection to improve student outcomes. The vast majority of administrators and faculty we interviewed at 18 public colleges and universities in the three states rated the extent of the states' effort to build up institutional capacity as low or nonexistent (Reddy et al., 2014).

4.4 Insufficient State Funding of Higher Education

Thirty-six respondents brought up lack of state funding as an obstacle to improving on the state performance funding metrics. In fact, during the Great Recession and several years after, state appropriations for higher education dropped sharply. In Indiana, the total operating appropriation for public higher education declined from \$1.282 billion for the 2008–2009 biennium to \$1.215 billion for the 2012–2013 biennium, a drop of 5 percent (Indiana Commission for Higher Education, 2013a). In Ohio, the state appropriation for the state share of instruction declined 10 percent between fiscal years 2009 and 2013, from \$1.953 billion to \$1.751 billion (Ohio Board of Regents, 2010, 2013c). And in Tennessee, state appropriations dropped from \$775 million in FY 2010 to \$725 million in FY 2011 (a drop of 6 percent), and they did not recover until FY 2014 (Tennessee Higher Education Commission, 2014b, p. 82).

Due to state budget cuts, our respondents reported that their institutions found it hard to fund new programs to support student improvement. Without adequate funding, community colleges and universities could not make important improvements in academic and student support services.⁹ Respondents at community colleges were particularly bothered about inadequate resources to help improve their students' performance. For example, a community college senior administrator in Ohio told us

⁹ Authors' interviews IN CC1 #6, 11, 12, 14; IN CC2 #1, 3, 5, 10; IN Univ3 #16; OH CC2 #6, 7, 10; OH CC3 #2; OH Univ3 #2; TN CC2 #12; TN CC3 #4, 9; TN Univ3 #2, 7.

inadequate funding made it very difficult to strengthen programmatic offerings that are essential to the education of at-risk students:

The challenge is at community college, how do you get at-risk students to persist and complete? ... That requires beefing up of some support services. ... You need to do dev. ed. [developmental education] differently, not as a block before they enter the college courses. You need to do some modeling where they do it simultaneously with college courses. How do you get at-risk students to move through and persist and complete? That takes some funding. The current funding models do not allow for that.

Along similar lines, in Indiana, a senior-level administrator at a community college remarked:

We get no funding in Indiana for remediation. Yet, well over 50 percent of our students take one or more remedial courses. You know, we get no additional funding to do that, at a cost to Ivy Tech of about \$40 million a year, above and beyond what tuition and fees cover.

In fact, respondents reported that their colleges sometimes had to support new programs by cannibalizing other ones, as explained by a Tennessee administrator:

We have robbed Peter to pay Paul. We're doing all we can with what we have. We have definitely looked at where our resources were, and what might work better to increase student success, and areas where we might be able to do a little less to be able to put the money where we need to make the funding formula, to increase student success, not to just necessarily increase funding, but so we can reach our goals that we want to make.

A senior administrator at an Indiana university noted the difficulty of meeting increasing demands at the same time as funds were shriveling. This person said that the more at-risk students colleges serve, the more services they need to provide, but with dwindling revenue streams, it becomes very challenging to do this:

We have a heavy teaching load, a heavy advising load, a heavy service load. ... I think in terms of the implementation, our resource reality is a fundamental challenge in terms of doing some of the things that would help us to do even better under the performance funding

formula. Again, I'll go back to that reality that when you have 30 percent of your student population that is first-generation, one in four students is 25 years old or older, you need certain special services. That takes money.

4.5 Institutional Resistance to Performance Funding

Resistance to performance funding was a frequently perceived obstacle at both community colleges and universities in our sample (see Table 6). The majority of resistance was attributed to faculty.¹⁰

Table 6
Reports of Institutional Resistance as an Obstacle

Obstacle	Number of Individuals at Community Colleges	Number of Individuals at Universities	Total Number of Individuals Mentioning	Number of Community Colleges with Mentions (Out of 9)	Number of Universities with Mentions (Out of 9)
Faculty resistance	12	11	23	7	5
General resistance	6	8	14	5	5
Resistance from senior administrators	0	1	1	0	1
Total number of unduplicated respondents reporting	18	20	38	8	7
Total number of reports	19	21	40		

Note. The total number of unduplicated respondents is the number of respondents who mentioned one or more obstacles related to institutional resistance. It is lower than the total number of reports because some respondents mentioned more than one obstacle.

In Ohio and to a small degree in Tennessee, a common argument was that faculty resisted performance funding because it threatened their professional autonomy.¹¹ Faculty resistance was interpreted in varied ways by different respondents. Mid-level and senior administrators argued that it was mostly about faculty hide-boundedness and resistance to

¹⁰ Authors' interviews IN CC1 #5; IN Univ3 #12, 16; OH CC1 #4; OH CC2 #14; OH CC3 #1, 7, 10; OH Univ1 #9, 11, 14; OH Univ2 #7, 8, 9, 11; OH Univ3 #7; TN CC1 #2; TN CC2 #1, 3, 8, 11; TN CC3 #5; TN Univ3 #8.

¹¹ Authors' interviews IN CC1 #5; IN Univ3 #12, 16; OH CC1 #4; OH CC2 #14; OH CC3 #1, 7, 10; OH Univ1 #9, 11, 14; OH Univ2 #7, 8, 9, 11; OH Univ3 #7; TN CC1 #2; TN CC2 #1, 3, 8, 11; TN CC3 #5; TN Univ3 #8.

change.¹² One mid-level nonacademic administrator in Tennessee summarized this sentiment succinctly by saying, “Obviously, it’s a change, so everybody is scared. Nobody likes change. It’s the worst possible thing in the world.” While this sentiment was more common among administrators, there were faculty members who agreed. A faculty member in Tennessee stated:

People don’t like change. I mean, really, beyond that, it’s our own selfishness, our own desire to maintain that strict control of our classrooms and what we do, and stay-out-of-my-way type of attitude. But, I mean, really, the holdback is getting people to buy in.

However, other respondents had a less critical view of faculty resistance. They suggested that faculty resisted more out of concerns about maintaining academic standards. A mid-level academic administrator in Tennessee argued that faculty feared that they would be forced to resort to grade inflation:

I’m closer to faculty than I am to other groups. And, again, the reason for their objections is because they’re concerned that they’re going to be expected to pass more students in order to raise the numbers.

We heard much the same from a mid-level university administrator in Ohio: “I mean, so there goes your rigor, there goes your standard, and there goes your learning outcomes. So that is a concern—like ‘Sure, I can get everybody to complete a course; I’ll just give out grades.’” For more on this concern about a weakening of academic standards, see Lahr et al. (2014).

Another reason given for faculty resistance was that, given performance funding programs’ emphasis on completion, teachers would have to spend more time advising students in order to get students to complete a degree or certificate on time, which would negatively impact their time for teaching and other activities (Authors’ interviews IN Univ3 #12; OH Univ2 #11). A mid-level university administrator in Ohio noted, “I think faculty do [have some] resistance because it takes more time for the faculty. Faculty advise the students the last two or three years. ... It does take away time from faculty.”

¹² Authors’ interviews IN CC1 #5, OH CC1 #4; OH CC3 #1, 7; OH Univ1 #9; OH Univ2 # 7, 9, 11; TN CC1 #2; TN CC2 #1, 3, 8, 11; TN CC3 #5; TN Univ3 #8.

Additionally, we saw evidence that faculty and staff feel underappreciated in their efforts to help students. A senior administrator at an Ohio community college observed:

I think the problem that you run into in higher education, [from] faculty members to administrative staff, is they see the work that's done on a daily basis, and I think the feeling you get from them is there's no recognition of that, that the more you see in the public, in the media, that higher education seems to be almost a fraudulent experience now—that, for some reason, there's the whole notion of, well, it's just a money sucker, and that's all there's any aspiration to. These are individuals who are professional educators.

This feeling of alienation is tied in part to a perception that the performance funding formula had been imposed top-down. For example, one mid-level Indiana academic administrator said, “Well, I do think the top-down thing is bad because it doesn't get buy-in from the stakeholders.”

Performance funding advocates in Indiana, Ohio, and Tennessee were concerned that performance funding could encounter strong institutional resistance if it were accompanied by big shifts in funding or by the use of indicators that were perceived as unfair to institutions (Dougherty et al., 2014; see also Lederman, 2009). In order to prevent large funding fluctuations, the states decided to phase in PF 2.0 gradually (Dougherty et al., 2014; see also Fingerhut, 2012; Ohio Board of Regents, 2009a, 2009b). Policymakers in Tennessee opted to phase in performance funding over three years in order to give campuses an opportunity to see how the program would work before encountering the brunt of the new system (Tennessee Higher Education Commission, 2011b). Ohio included a “stop-loss” provision that limited how much funding colleges might lose from one year to the next during the first few years of its new performance funding program (Dougherty et al., 2014; see also Fingerhut, 2012; Ohio Board of Regents, 2009a, 2009b). Finally, Indiana's policymakers chose to increase the percentage of funding attached to the program gradually (Indiana Commission for Higher Education, 2011; Stokes, 2011). Despite these efforts, it is clear that there is significant resistance to performance funding in our three states that policymakers may want to address.

4.6 Insufficient Knowledge of Performance Funding

We found that a good number of respondents felt overwhelmed by the sheer complexity of the performance funding formulas and that this hindered colleges in responding to performance funding.¹³ A mid-level community college administrator in Ohio noted:

I can honestly say that over those probably 10 years where I have been working in higher education in Ohio, the formula for funding higher education in Ohio is so complex and difficult to understand that I think people just naturally migrate away from trying to explain to people. Business and finance officers understand how it works. There's some people in institutional research who might understand and some other people around the state, but it's just so difficult to understand all of the different models that go into determining how funding is allocated that I think it's a combination that people just don't want to have to because it is so complicated.

A faculty member at a Tennessee university observed:

The formula is so complex that it's almost like you can keep the money from going out of one pocket, you can stop the hole there, and the hole happens in a different pocket. It's so complex that you can do very well on one measure and spend a lot of effort there and then, by doing that, not do well on another measure and wind up losing money.

The advocates and designers of performance funding were aware that insufficient knowledge could hinder its effectiveness (Dougherty et al., 2014). Hence, state officials made substantial efforts to spread the word about the goals and desired methods of performance funding through meetings with local officials, reports, emails, and coverage in local news media. However, these information dissemination efforts were focused on senior college administrators and less often targeted faculty and mid-level administrators (Reddy et al., 2014). As a result, in other research, we found evidence that those efforts failed to effectively reach a lot of middle-level administrators and faculty. Even if they

¹³ Authors' interviews IN CC1 #2, 11, 12; IN CC3 #3, 9, 10; OH CC1 #3, 6, 9; OH CC2 #1, 6, 14; OH CC3 #3, 6, 11; OH Univ1 #3; Univ2 #4, 6, 7, 9, 11, 13, 16; TN CC1 #1; TN CC2 #2, 10; TN CC3 #5; TN Univ1 #10; TN Univ2 #1; TN Univ3 #9.

were *aware* of the performance funding program, they often did not *understand* it in any detail (Reddy et al., 2014). For example, a mid-level academic administrator at an Indiana community college stated:

And the thing that has been rolled out in somewhat of an unclear fashion, the communication and actual details and purpose and all those things sometimes are not communicated as well as they should be. It leaves people to speculate or guess, and that's not good. I think they sent out email notices and a few mentions in meetings, but I do think we're lacking of having a real focused effort toward filling people in on what really needs to happen.

It could be argued that it is not important that faculty and mid-level administrators understand performance funding; it is enough that senior administrators do. However, this misses the fact that higher education institutions have a culture of shared governance in which faculty are not only the main suppliers of the essential professional services but also play a key role in the governance of the institution. Hence, their understanding and appreciation of performance funding are key to whether it will work as effectively as intended. Hence, in the summary and conclusion, we suggest additional actions that states can take to improve the knowledge of faculty and staff throughout the institution.

5. Differences Within Our Main Findings

This section details the variations to be found within our main findings. It examines the ways in which the obstacles reported vary between states, later versus earlier programs, institution types, and the institutional positions of our interviewees within their colleges.

5.1 Differences by State

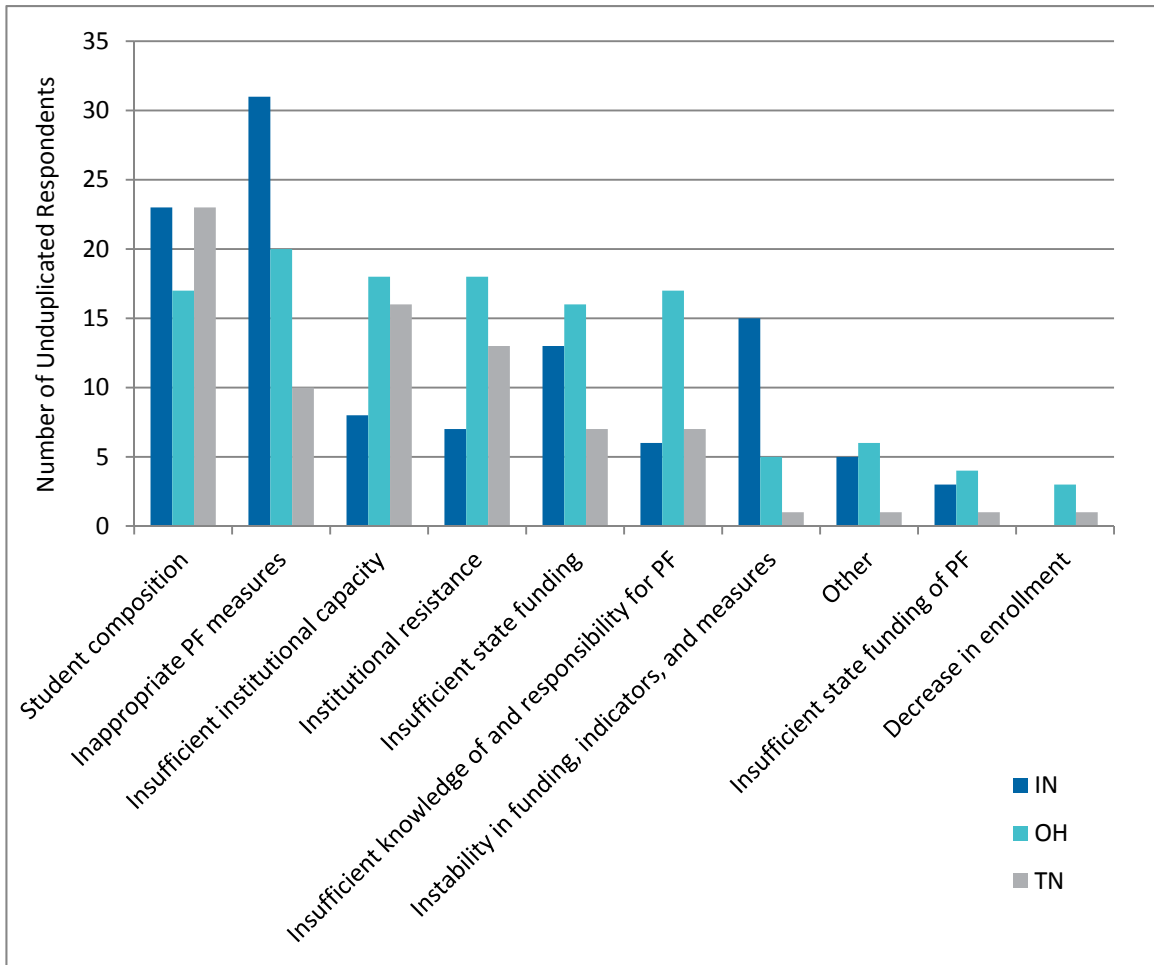
For the most part, respondents in each of the states agreed on the biggest obstacles to improving on their performance. However, there were some interesting variations by state (see Figure 1). To begin, Tennessee had considerably fewer respondents mentioning

obstacles (80) than did Indiana (111) and Ohio (124).¹⁴ Part of this may be due to the fact that Tennessee has had the longest history of performance funding, so more of the kinks may have been worked out, and college respondents may have become more comfortable with performance funding. Also, our data suggest that Tennessee college administrators and faculty were more aware of and better understood the performance funding policy in their state than their counterparts in the other states, which would lessen reports of insufficient knowledge as an obstacle (see Reddy et al., 2014). The perceived obstacles Tennessee respondents most often cited tended to focus on contextual or local challenges instead of challenges that are inherent to the policy design. Student body composition is a good example of this.

Ohio respondents expressed the greatest intensity and scope of obstacles. That is, Ohio had the most respondents mentioning obstacles and the highest number of institutions represented. In terms of specific obstacles, the biggest variation between Ohio and the other states occurs in insufficient knowledge of performance funding. Ohio respondents far more often mentioned this obstacle than respondents in Indiana and Tennessee. There were also more mentions of institutional resistance in Ohio than in Indiana and Tennessee. Two possible factors may be at work. From a top-down implementation perspective, the less complete communication from policy framers in Ohio versus Tennessee (see Reddy et al., 2014) may have left local actors in Ohio more confused about or resistant to the policy design. And from the bottom-up perspective, there may have been more local resistance due to divergent local institutional values because of Ohio's tradition of decentralized higher education governance (Moden & Williford, 2002). However, we also attribute some of the heightened response from Ohio to the fact that our interviews occurred around the time the 2009 formula was revised in 2013. Ohio's revised formula ties significantly higher percentages of community college funding to outcomes and likely made some of our interviewees more alert to and uncomfortable with performance funding compared with respondents in other states.

¹⁴ These are numbers of mentions. A respondent could mention more than one obstacle. Hence, these counts are higher than the number of unduplicated respondents mentioning one or more obstacles.

Figure 1
Perceived Obstacles by State



Indiana had the highest number of reports of obstacles related to inappropriate measures and to instability in funding, indicators, and measures. This is probably due to the fact that the state indicators in Indiana have changed repeatedly over the years (Indiana Commission for Higher Education, 2013b). A senior administrator at an Indiana university discussed how difficult it is to keep up with the changes in the performance indicators:

It's very difficult from year to year to plan what our campus budget will be or income from the state. They did change the criteria from fiscal year 2012–13 to 14–15. At one point, there was a dual credit for completion. So the campus really put an emphasis on dual credit for high school students ... and then they changed the funding formula.

Yet, Indiana also had the fewest reports of resistance to the performance funding program. Though these two variables do not have to be completely correlated, it is difficult to reconcile the fact that the performance funding measures were frequently described as failing to capture student success and as changing too frequently with the lack of evidence of resistance.

5.2 Differences Between Earlier and Later Policies in Tennessee and Ohio

We can discern some differences between the earlier and later programs in Ohio and Tennessee. However, our data on these comparisons are not as reliable as our data on the later programs, so we do not want to put too much emphasis on them.

Tennessee: 2010 versus 1979. Tennessee was the first state to establish a PF 1.0 program in 1979. Most of our Tennessee respondents could not recall the 1979 policy in detail. Many had begun working in the Tennessee higher education sector well after it was established. While it continues to operate to this day, it is much less on people's minds than the new program established by the Complete College Tennessee Act of 2010. Despite the limitations of our data for Tennessee's earlier program, we found the newer program was associated with a considerable uptick in reports of obstacles related to student body composition, insufficient institutional capacity, and institutional resistance (see Table 7). The increased reports of obstacles associated with student body composition was by far the biggest change, and reports were often accompanied by discussion of the economic recession of 2007 to 2009, shrinking of the manufacturing sector, and students' inability to get jobs. Because students cannot easily succeed in the labor market without a college education, colleges have experienced increasing enrollment of students with more personal challenges to overcome.

Table 6
Reported Differences Between Earlier and Later Programs in Tennessee

Obstacle	Number of Reports	
	1979	2010
Student body composition	2	23
Insufficient institutional capacity	3	16
Institutional resistance	5	13
Inappropriate performance funding measures	6	10
Insufficient state funding of higher education	5	7
Insufficient knowledge of performance funding	1	7
Instability in funding, indicators, and measures	1	1
Insufficient state funding of performance funding	1	1
Decrease in enrollment	—	1
Other	3	1
Total number of reports	27	80

Note. The total number of reports is higher than the total number of unduplicated respondents who mentioned any obstacles, as it includes individuals who reported more than one obstacle and reported obstacles for both the earlier and later PF programs. We have substantially more data for the 2010 program, which explains the substantial difference in total mentions between the 1979 and 2010 programs.

Ohio: The 2013 revision versus the original 2009 formula. Our Ohio data are more limited than our data from Tennessee. Very few of our respondents knew much about Ohio’s Success Challenge program, which operated between 1997 and 2009. They had more to say about the 2009 outcomes-based formula and its revision in 2013. However, even for the later program and its revision, our data are limited. Because the new formula does not take full effect until FY 2015, our interviewees could only speak in hypothetical terms about its expected impact. Moreover, the changes of the new formula carry much greater implications for community colleges than for universities (see Appendix B), so the university respondents had very little to say. What we can confirm is that the obstacles perceived with regard to the 2009 program persist with the 2013 revision. Inappropriate performance funding measures, insufficient institutional capacity, and insufficient knowledge of performance funding remain the top three obstacles mentioned for both the 2009 and 2013 versions of the formula (see Table 8).

Table 7
Reported Differences Between Earlier and Later Versions of 2009 Program in Ohio

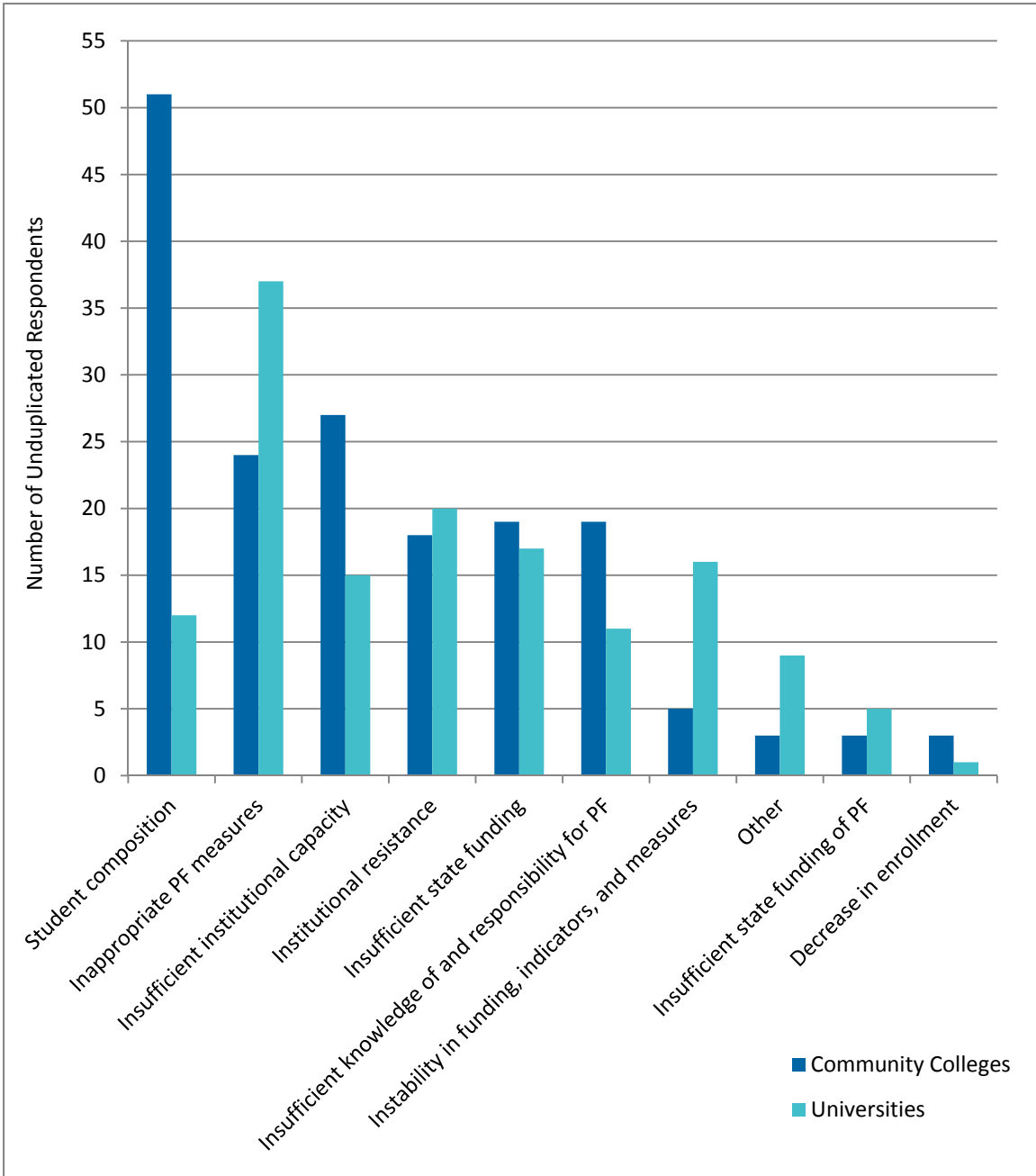
Obstacle	Number of Reports	
	2009	2013
Inappropriate performance funding measures	20	5
Insufficient institutional capacity	18	6
Insufficient knowledge of performance funding	17	5
Student body composition	17	4
Institutional resistance	18	2
Insufficient state funding of higher education	16	2
Instability in funding, indicators, and measures	5	2
Decrease in enrollment	3	1
Insufficient state funding of performance funding	4	—
Other	6	1
Total number of reports	124	28

Note. The total number of reports is higher than the total number of unduplicated respondents who mentioned any obstacles, as it includes individuals who reported more than one obstacle and reported obstacles for both the earlier and later versions of the 2009 program. We have substantially more data for the earlier version, which explains the substantial difference in total reports between the earlier and later versions of the program.

5.3 Differences Between Community Colleges and Universities

Given the different missions and structures of community colleges and universities, one might expect that respondents at these two types of institutions would report different obstacles, and that is what we find. Respondents at community colleges overall reported more obstacles (172) than did those at universities (143). The main difference between community colleges and universities is that our respondents at community colleges more often perceived student body composition, insufficient institutional capacity, and insufficient knowledge as hindrances to performance, while the respondents at universities focused more on inappropriate performance funding measures and instability in the metrics as hindrances (see Figure 2).

Figure 2
Perceived Obstacles at Community Colleges and Universities



The focus on student body composition at community colleges is not surprising. Community colleges enroll more academically underprepared and economically disadvantaged students than do universities. Among students surveyed as part of the 2003–04 Beginning Postsecondary Students study, 43 percent of two-year college entrants had parents with a high school degree or less, compared with 23 percent of four-year college entrants. Moreover, among the two-year college entrants who had taken the SAT or ACT, 42 percent scored in the lowest quartile, compared with 13 percent of four-year college entrants (Berkner & Choy, 2008, pp. 10–11). It is the community colleges' mission to help these students, but open-door enrollment makes it harder for community colleges to post graduation numbers as high as those at universities.

The second most commonly perceived obstacle among our community college respondents was insufficient institutional capacity to respond to performance funding. Community college respondents more often said that their institutions needed more resources to improve the ability of their IR offices to collect and analyze data. Additionally, they more often reported shortages of qualified staff and faculty. A faculty member at an Ohio community college said:

You know, we're all becoming data-driven institutions. But it's very difficult to get the data that you need, because there's not enough people to get it to you. And then there's sloppiness, unfortunately, with the data that is provided. I mean, it's a key problem for this institution, their institutional research and planning.

University respondents more often commented that they were hindered by inappropriate performance funding measures. The respondents at low-capacity four-year institutions more often mentioned that they were being unfairly compared to the highest performing universities in the state and expected to perform as well. Meanwhile, several respondents at the high-performing campuses mentioned that their institutions were limited by a ceiling effect, where they had a hard time improving on their already high performance.

5.4 Differences by Organizational Capacity

In selecting institutions for our study, we picked colleges in the top, middle, and bottom third in their states in expected capacity to respond to the demands of the performance funding formula. Our criteria were college resources (revenues per FTE student), data-analytic capacity (as rated by two experts in each state), and proportion of disadvantaged students (percentage of students receiving Pell Grants and percentage of racial/ethnic minority students).¹⁵

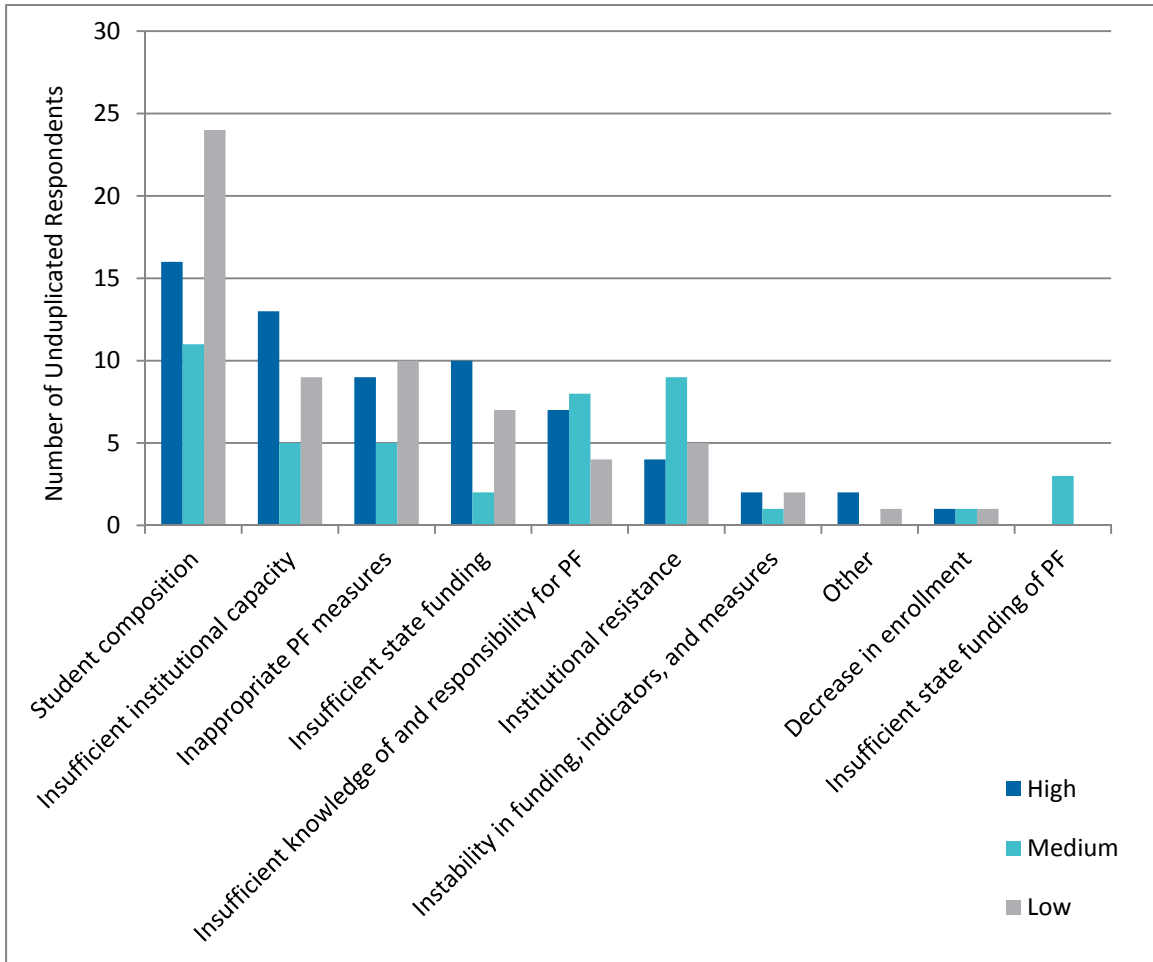
Figure 3 illustrates how reports about obstacles varied across low-, medium-, and high-capacity community colleges. Respondents at high-capacity colleges and low-capacity colleges reported almost the same number of obstacles (64 and 63, respectively), while those at medium-capacity colleges less often reported obstacles (45 reports).¹⁶ It is understandable that respondents at low-capacity community colleges would more often report obstacles in responding effectively to the performance funding program, but it is less clear why respondents at high-capacity community colleges reported nearly as many. Perhaps respondents at high-capacity colleges were more aware of the challenges they faced in working to improve their performance on the metrics.

On the whole, we found the same two obstacles were mentioned most often across community colleges: student body composition and insufficient institutional capacity. However, respondents at low-capacity colleges particularly mentioned having many academically unprepared and low SES students as the most important obstacle to improving student outcomes (17 out of 24 respondents mentioning student body composition). In contrast, the student body composition obstacles mentioned at high-capacity community colleges more often pertained to the presence of many non-degree seekers and part-time students (11 out of 16 respondents mentioning student body composition). In fact, none of our respondents at high-capacity community colleges mentioned having many low-SES students as an obstacle.

¹⁵ The data for college revenues, percentage of students receiving Pell Grants, and percentage of racial/ethnic minority students come from IPEDS (2011 data).

¹⁶ These are reports and not the unduplicated number of respondents making a report. A respondent might report more than one obstacle.

Figure 3
Perceived Obstacles by Community College Capacity

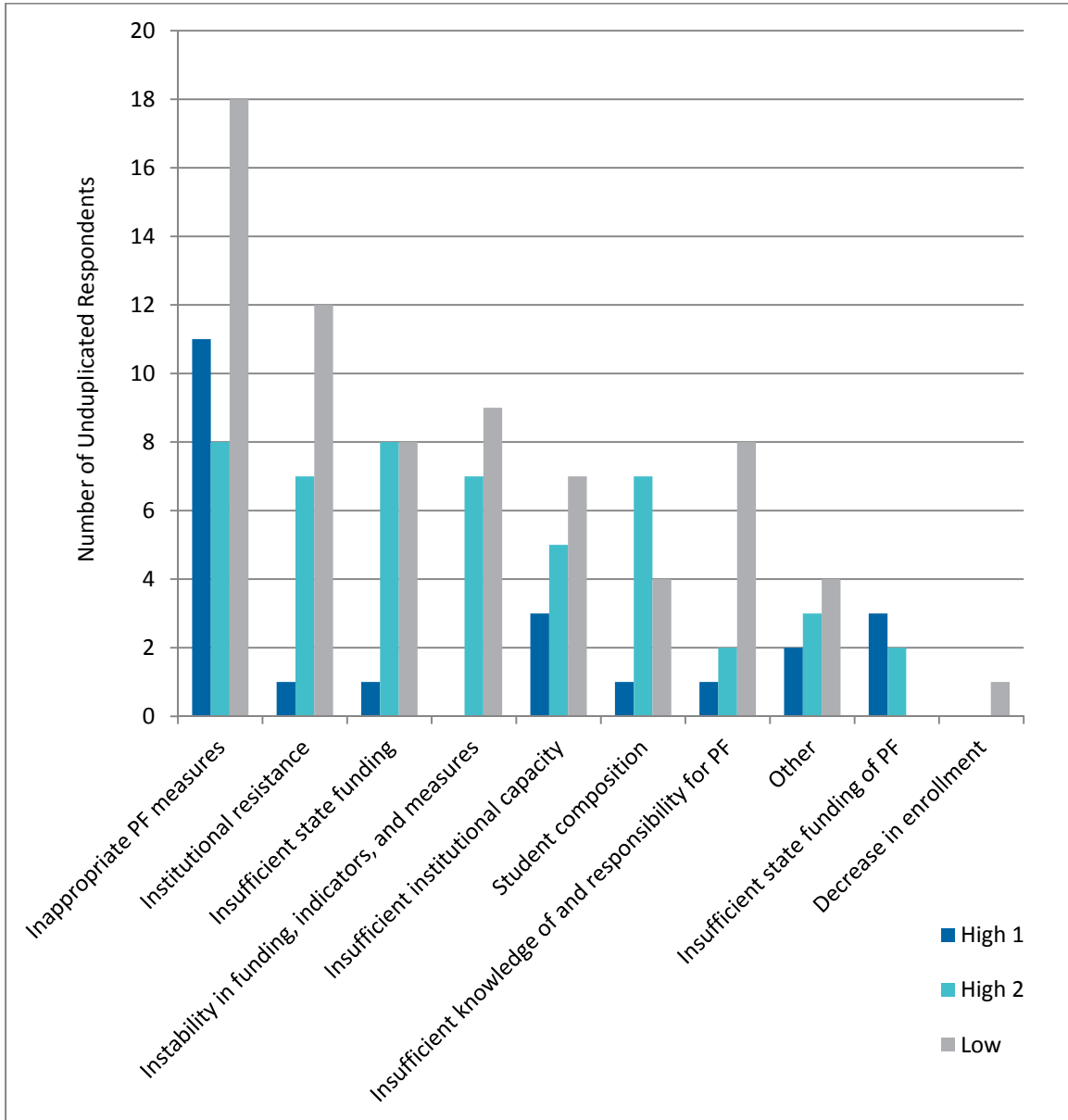


Regarding insufficient institutional capacity, it was respondents at high-capacity community colleges who most often mentioned insufficient IR and IT capabilities. It may have been that they were more aware of the utility of a strong IR capacity and thus were more aware of their deficiencies in this area.

Figure 4 summarizes the obstacles reported at universities according to capacity. The pattern is what we would expect. Respondents at low-capacity universities reported the most obstacles (71 reports). Respondents at high-capacity, research-intensive universities (high 1) reported the fewest obstacles (23 reports), probably because their institutions had the most resources. Across types of universities, inappropriate performance indicators and institutional resistance were mentioned most often. However,

these were mentioned considerably more often by respondents at the low-capacity universities than at the high-capacity universities.

Figure 4
Perceived Obstacles by University Capacity



5.5 Differences by Interviewee Institutional Position

We found important differences in the perceptions of senior administrators, mid-level nonacademic administrators, mid-level academic administrators, and faculty (department chairs and chair of the faculty senate). On the whole, all of these respondent groups were most concerned with student body composition, inappropriate measures, and insufficient institutional capacity (see Table 9). However, within each of these institutional position categories, certain other obstacles were more prominent.

Table 8
Reported Obstacles by Interviewee Institutional Position

Obstacle	Senior Administrators (n = 80)	Mid-Level Administrators (Nonacademic) (n = 35)	Mid-Level Administrators (Academic) (n = 47)	Faculty (n = 60)
Student body composition	27.50%	31.43%	21.28%	33.33%
Inappropriate performance funding measures	33.75%	17.14%	27.66%	25.00%
Insufficient institutional capacity	20.00%	14.29%	21.28%	18.33%
Institutional resistance	12.50%	17.14%	21.28%	20.00%
Insufficient state funding of higher education	23.75%	14.29%	6.38%	15.00%
Insufficient knowledge of performance funding	22.50%	5.71%	8.51%	10.00%
Instability in funding, indicators, and measures	12.50%	2.86%	12.77%	6.67%
Insufficient state funding of performance funding	2.50%	5.71%	6.38%	1.67%
Decrease in enrollment	2.50%	0.00%	4.26%	0.00%
Other	2.50%	2.86%	4.26%	11.67%

Note. These figures are for reports and are not unduplicated. An interviewee could report more than one obstacle and therefore show up in more than one row in a given column. Percentages are the ratio of the number of interviewees mentioning the obstacle to the total number of interviewees in that specific institutional position.

Senior administrators were more concerned with insufficient state funding of higher education and insufficient knowledge of performance funding than were respondents in other positions. On the first point, it was clear they felt burdened by shortfalls in state funding and limited discretionary funding for new programs. A senior administrator from a high-capacity Ohio university illustrated this concern:

The expectation from the state is that we want to cut your funding back to 1990 levels, but we expect you to be performing at a level higher than you ever had. And most of these initiatives are expensive, however you go about approaching trying to improve the performance. It almost always involves some sort of immersive, active change in how you are working with students. And those require people, and they require money. . . . Institutions can reprioritize things and do that, but there's also a limit, I think, that you're going to find in how much improvement can be made, given the equation that you have to work with.

Meanwhile, institutional resistance was more often mentioned by faculty and mid-level academic administrators than by senior administrators and mid-level nonacademic administrators. This may be due to the largely top-down delivery of performance funding information and requirements (see Reddy et al., 2014).

6. Summary and Conclusion

Although policy framers in Indiana, Ohio, and Tennessee intended for performance funding policies to change institutional behavior in order to improve student performance, there are several persistent obstacles that hinder higher education institutions from performing well on the states' metrics. Our respondents perceived the improvement of student outcomes to be inhibited primarily by the composition of their student bodies (in the cases of community colleges and broad-access public universities), inappropriate performance funding metrics, and insufficient institutional capacity.

With regard to student body composition, many of our respondents perceived that the most difficult obstacle to responding to the performance funding formula is the fact that open-access institutions educate many students who face academic, social, and economic challenges that make it difficult for them to graduate. Students who attend community colleges tend to be less well prepared academically and less advantaged socioeconomically than students who attend four-year institutions, which means that community colleges have a more difficult time doing well on the state metrics. While these concerns of our community college respondents are justifiable, they could be interpreted as somewhat self-serving. The great stress on student body composition as an obstacle could verge on

“blaming the victim” if it were to exempt institutions from having to examine how their policies and programs might be contributing to poor student outcomes for less advantaged students (Kezar, Glenn, Lester, & Nakamoto, 2008; Witham & Bensimon, 2012). On the other hand, it would be unfair to broad-access institutions to argue that they do not face obstacles that are greater than those faced by selective, resource-rich institutions.

In part because of the differences between institutions in student body composition and organizational mission, many of our respondents also stated that they perceived the performance funding metrics to be poorly matched to their institutions’ goals. Respondents at community colleges often perceived the state metrics as unrealistically holding them to the same standards as four-year institutions. These respondents argued that many students at community colleges do not intend to get a degree, unlike students at four-year institutions, or will not do so in a timely fashion. Hence, performance metrics for graduation, particularly timely graduation, would be more difficult for community colleges to realize. Meanwhile, respondents at high-capacity universities, particularly in Indiana, were frustrated because they felt their institutions had little room to improve. They felt there was a ceiling effect in that institutions that were already doing well had little room to make big gains in student outcomes.

Finally, many of our respondents pointed to their institutions’ lack of sufficient organizational capacity as a major obstacle. Respondents at most community colleges and universities reported having too little IR capability. We also sometimes heard about inadequate IT capacity, shortages of qualified staff and faculty, limited student services, small institutional size, and inability to perform additional tasks necessary to improve in the time allotted. These findings highlight the importance of state support for institutions’ capacity building, particularly the development of their IR capacity—something that the states have not given enough attention to (see Dougherty et al., 2014; Reddy et al., 2014).

Comparing our findings for Indiana, Ohio and Tennessee, we note that Tennessee reported substantially fewer perceived obstacles overall than either of the other states. This may be because Tennessee had the longest experience with performance funding, allowing the state to engage in long-term policy learning about effective ways to approach performance funding (Dougherty & Natow, in press). Ohio reported the most obstacles. We suspect this may be strongly related to the timing of our interviews. Ohio’s

performance funding policy revisions in 2013 dramatically changed the funding formula, particularly for community colleges, and these revisions were being made as we were conducting our community college interviews in Ohio. The proportion of state funding attached to performance indicators was increased from 5 percent in FY 2011 to 50 percent in FY 2014 and was to rise to 100 percent in FY 2015 (Ohio Association of Community Colleges, 2013; Ohio Board of Regents, 2012). However, the higher number of reported obstacles in Ohio than Tennessee could also be due in part to differences in length of experience with performance funding and how well the state has communicated the goals and methods of performance funding to the colleges (see Reddy et al., 2014).

We note that our respondents at community colleges and at public universities differed in the relative importance they put on particular obstacles. Our community college respondents particularly emphasized student body composition and insufficient organizational capacity, while the university respondents more often mentioned inappropriate performance funding measures.

Respondents' perceptions of obstacles also varied across colleges differing in their expected capacity to respond to performance funding. Respondents at the low-capacity community colleges more often reported than those at high-capacity community colleges that student body composition, insufficient institutional capacity, and insufficient state funding of higher education were important obstacles to responding effectively. Meanwhile, compared with those at high-capacity universities, respondents at low-capacity universities more often mentioned obstacles involving inappropriate performance indicators, institutional resistance, and insufficient state funding for higher education.

Finally, respondents in different positions within their institutions were about equally concerned about student body composition, inappropriate measures, and insufficient capacity. However, senior administrators were more concerned than were respondents in other positions about insufficient state funding for higher education and insufficient knowledge of performance funding. Meanwhile, institutional resistance was more often mentioned by faculty and mid-level academic administrators than by senior administrators and mid-level nonacademic administrators.

The top-down and bottom-up perspectives in policy implementation research and principal-agent theory are useful in analyzing the obstacles to performance funding

implementation. These theoretical perspectives help to explain, in different ways, why the local response to state or national programs may deviate in form and results from the directions intended by policy framers. The top-down perspective often attributes deviations to a lack of capacity at the local level, be it a lack of expertise or lack of money and organizational resources (Honig, 2006; Matland, 1995; Mazmanian & Sabatier, 1989). In fact, an important theme in our respondents' reports is that limited institutional capacity and lack of state guidance makes it difficult for colleges to collect and analyze data in order to determine the most effective means to improve their student outcomes. The top-down perspective would also suggest that an inadequate response by institutions to performance funding demands may be due insufficient state funding for higher education, which makes it difficult for institutions to provide services for the many students who are not well prepared academically or oriented toward receiving degrees.

Meanwhile, the bottom-up perspective and principal-agent theory stress the importance of differences in the goals and beliefs of policy framers and local actors in explaining implementation difficulties. Members of an institution may do things differently than intended by the policy framers because they have different goals. Our interviews revealed a sizable amount of resistance on the part of faculty, who see performance funding as a threat to some of their central values: maintaining the quality of education and protecting their professional autonomy.

Our findings about the obstacles perceived by our respondents at community colleges and public universities carry some important policy implications. It is clear that the states have tried to anticipate and prevent these obstacles, but the frequency with which they are reported indicates that more needs to be done. The frequent mention of student body composition as a hindering factor points to the importance of providing more state assistance to institutions enrolling large numbers of less prepared and less advantaged students to enable institutions to meet the needs of those students. To be sure, our three states did provide a premium for completions by less advantaged students, and our respondents noted that this premium was helpful. However, a good number—particularly those located in community colleges—felt that even more support is needed. According to many senior administrators and faculty, increases in funding for financial aid and student services are needed to improve the ability of broad-access institutions to

help their less prepared and low-income students succeed. We would add that states should consider adjusting comparisons between institutions to take into account differences in student body composition. Rather than comparing quite different institutions, states could take into account differences in student composition by such means as allowing performance targets to vary across colleges according to their student characteristics, comparing colleges to peer colleges with similar student body composition, or by comparing a college's recent performance to its performance in the past (Bailey, 2012; Shulock & Jenkins, 2011).

This discussion leads into the issue of the appropriateness of performance indicators. States have clearly tried to address the problem posed by inappropriate indicators and measures by differentiating to a greater or lesser degree the indicators for different kinds of institutions, particularly community colleges and universities. However, these efforts should go further. Graduation measures for community colleges should be broken down by whether or not students intend to get a degree (Bailey, 2012; Committee on Measures of Student Success, 2011; Offenstein & Shulock, 2010). It has been proposed, for example, that students' intention to get a degree could be gauged by whether students have taken more than six credits in their first year and have enrolled within their first two years in a college-level math or English course (Offenstein & Shulock, 2010). In addition, performance funding programs should include indicators of successful transfer and pair them with measures of graduation, given that many community college students transfer to a four-year college without first getting a community college degree (Committee on Measures of Student Success, 2011; Goldberger & Gerwin, 2008; U.S. Department of Education, 2012). In April 2012, the U.S. Department of Education announced that it would take steps in this direction (U.S. Department of Education, 2012).

Many students attend community colleges part-time or have to begin by taking noncredit remedial courses and therefore do not complete a degree within the three years mandated by the federal Graduation Rate Survey. Hence, if states use a time-to-degree indicator, it would behoove them to significantly extend the time frame for tracking outcomes for students, particularly for community college students. When community college students are tracked through six years after entry instead of three, completion

rates rise sharply (Calcagno, Bailey, Jenkins, Kienzl, & Leinbach, 2008; Goldberger & Gerwin, 2008; Offenstien & Shulock, 2010; see also Attewell & Lavin, 2007).

In developing more appropriate performance metrics, it is important that states consult regularly, widely, and deeply with a wide variety of institutional personnel. Several respondents called for periodic revisiting of the performance metrics to make sure they were working well (Authors' interviews TN CC2 #2b; TN Univ2 #1b; TN Univ3 #5b). Others suggested that performance funding metrics include some indicators specific to individual institutions.

Our respondents also frequently reported inadequate IR and IT capacity, a shortage of qualified staff and faculty, and other obstacles related to insufficient capacity to respond to performance funding. However, our three states—with the partial exception of Ohio—have not provided funding and technical assistance to allow colleges to enlarge their IR and IT resources and their understanding of how to use data analysis and organizational reflection to improve student outcomes (Dougherty et al., 2014; Reddy et al., 2014). At the very least, colleges need more help from states to acquire better IT systems and to develop larger and better trained IR offices that can conduct sophisticated analyses of student progression and outcomes, train faculty and staff in how to do the same, and evaluate the impacts of programmatic changes by institutions. Moreover, resource-poor colleges will need assistance to improve their capacity to devise solutions to performance problems. This entails states providing technical assistance and creating opportunities for colleges to create communities of practice with colleges facing similar challenges (Dowd & Tong, 2007; Shulock & Jenkins, 2011; see also Jones et al., 2014; Kerrigan, 2010; Witham & Bensimon, 2012). Without this assistance, resource-poor colleges may face a vicious cycle in which they generate poor performance, which leads to declining state funding, which in turn further weakens their institutional capacity and again leads to poor performance.

Finally, to meet institutions' need for resources for programmatic and IR innovations to improve student outcomes, states should consider establishing competitive programs to fund such ventures. Colleges should be provided with aid to implement new academic and student services policies, programs, and practices intended to improve institutional performance on state metrics.

References

- ACT. (2012). *The condition of college & career readiness 2012: Low-income students*. Iowa City, IA: Author. Retrieved from <http://www.act.org/newsroom/data/2012/states/pdf/LowIncomeStudents.pdf>
- Alstadt, D., Fingerhut, E. D., & Kazis, R. (2012). *Tying funding to community college outcomes: Models, tools, and recommendations for states*. Boston, MA: Jobs for the Future. Retrieved from <http://www.jff.org/sites/default/files/publications/TyingFunding2CommColleges-042312.pdf>
- Astin, A. W., & Oseguera, L. (2005). Precollege and institutional influences on degree attainment. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 245–276). Westport, CT: Praeger.
- Attewell, P., & Lavin, D. E. (2007, July 6). Distorted statistics on graduation rates. *Chronicle of Higher Education*. Retrieved from <http://chronicle.com/>
- Bailey, M. J., & Dynarski, S. M. (2011). *Gains and gaps: Changing inequality in U.S. college entry and completion* (NBER Working Paper No. 17633). Cambridge, MA: National Bureau of Economic Research.
- Bailey, T. (2012). *Developing input-adjusted metrics for community college performance*. Washington, DC: HCM Strategists. Retrieved from http://www.hcmstrategists.com/contextforsuccess/papers/BAILEY_PAPER.pdf
- Bailey, T., Jeong, D. W., & Cho, S. W. (2010). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review*, 29(2), 255–270.
- Banta, T. W. (Ed.). (1986). *Performance funding in higher education: A critical analysis of Tennessee's experience*. Boulder, CO: National Center for Higher Education Management Systems.
- Berkner, L., & Choy, S. (2008). *Descriptive summary of 2003-04 beginning postsecondary students: Three years later* (NCES 2008-174). Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2008/2008174.pdf>
- Berry, F. S., & Berry, W. D. (2007). Innovation and diffusion models in policy research. In P. A. Sabatier (Ed.), *Theories of the policy process* (2nd ed., pp. 223–260). Boulder, CO: Westview Press.
- Bogue, E. G., & Johnson, B. D. (2010). Performance incentives and public college accountability in the United States: A quarter century policy audit. *Higher Education Management and Policy*, 22(2), 1–22.

- Burke, J. C. (Ed.). (2002). *Funding public colleges and universities: Popularity, problems, and prospects*. Albany, NY: Rockefeller Institute Press.
- Burke, J. C. (Ed.). (2005). *Achieving accountability in higher education: Balancing public, academic, and market demands*. San Francisco, CA: Jossey-Bass.
- Calcagno, J. C., Bailey, T., Jenkins, D., Kienzl, G., & Leinbach, T. (2008). Community college success: What institutional characteristics make a difference? *Economics of Education Review*, 27(6), 632–645.
- Coburn, C. E., & Stein, M. K. (2006). Communities of practice theory and the role of teacher professional community in policy implementation. In M. I. Honig (Ed.), *New directions in education policy implementation: Confronting complexity* (pp. 25–46). Albany, NY: State University of New York Press.
- Committee on Measures of Student Success. (2011). *A report to Secretary of Education Arne Duncan*. Washington, DC: U.S. Department of Education. Retrieved from <http://www2.ed.gov/about/bdscomm/list/cmss-committee-report-final.pdf>
- de Bruijn, H. (2002). Performance measurement in the public sector: Strategies to cope with the risks of performance measurement. *International Journal of Public Sector Management*, 15(7), 578–594.
- Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R., Pheatt, L., & Reddy, V. (2014). *Envisioning performance funding impacts: The espoused theories of action for state higher education performance funding in three states* (CCRC Working Paper No. 63). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Dougherty, K. J., & Natow, R. S. (in press). *The politics of performance funding: Origins, discontinuations, and transformations*. Baltimore, MD: Johns Hopkins University Press.
- Dougherty, K. J., Natow, R. S., Bork, R. H., Jones, S. M., & Vega, B. E. (2013). Accounting for higher education accountability: Political origins of state performance funding for higher education. *Teachers College Record*, 115(1), 1–50.
- Dougherty, K. J., & Reddy, V. (Eds.). (2013). Performance funding for higher education: What are the mechanisms? What are the impacts? [Special issue]. *ASHE Higher Education Report*, 39(2), 1–134.
- Dowd, A. C., & Tong, V. P. (2007). Accountability, assessment, and the scholarship of “best practice.” In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (vol. 22, pp. 57–119). Dordrecht, The Netherlands: Springer.
- Dunlop-Loach, B. J. (2000). *Ohio’s two-year campus response to performance funding: A grounded theory approach*. (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses: Full Text. (Publication No. AAT 9980368).

- Erikson, R. S., Wright, G. C., & McIver, J. P. (2005). *Public opinion in the states: A quarter century of change and stability*. New York, NY: Columbia University, Department of Government.
- Ferguson, M. (2013). Governors and the executive branch. In V. Gray, R. L. Hanson, & T. Kousser (Eds.), *Politics in the American states: A comparative analysis* (10th ed., pp. 208–250). Washington, DC: CQ Press.
- Fingerhut, E. (2012). Reflections on Ohio’s new performance-based funding system: Defusing a ticking time bomb. In D. Alstadt, E. Fingerhut, & R. Kazis (Eds.), *Tying funding to community college outcomes: Models, tools, and recommendations for states* (pp. 8–15). Boston, MA: Jobs for the Future.
- Forsythe, D. W. (Ed.). (2001). *Quicker, better, cheaper? Managing performance in American government*. Albany, NY: Rockefeller Institute Press.
- Goldberger, S., & Gerwin, C. (with Choitz, V.). (2008). *Test drive: Six states pilot better ways to measure and compare community college student performance*. Boston, MA: Jobs for the Future.
- Gray, V., Hanson, R. L., & Kousser, T. (Eds.). (2013). *Politics in the American states: A comparative analysis* (10th ed.). Washington, DC: CQ Press.
- Grizzle, G. A. (2002). Performance measurement and dysfunction: The dark side of quantifying work. *Public Performance and Management Review*, 25(4), 363–369.
- Hamm, K. E., & Moncrief, G. F. (2013). Legislative politics in the states. In V. Gray, R. L. Hanson, & T. Kousser (Eds.), *Politics in the American states: A comparative analysis* (10th ed., pp. 163–207). Washington, DC: CQ Press.
- Harnisch, T. L. (2011). *Performance-based funding: A re-emerging strategy in public higher education financing* (A Higher Education Policy Brief). Washington, DC: American Association of State Colleges and Universities.
- HCM Strategists. (2011). *Performance funding in Indiana: An analysis of lessons from the research and other states models* (Working Draft). Washington, DC: Author.
- Heinrich, C. J., & Marschke, G. (2010). Incentives and their dynamics in public sector performance management systems. *Journal of Public Policy and Management*, 29(1), 183–208.
- Hoachlander, G., Sikora, A. C., & Horn, L. (2003). Community college students: Goals, academic preparation, and outcomes. *Education Statistics Quarterly*, 5(2), 121–128.
- Hodara, M. (2013). *Improving students’ college math readiness: A review of the evidence on postsecondary interventions and reforms* (CAPSEE Working Paper). New York, NY: Center for Analysis of Postsecondary Education and Employment.

- Holbrook, T. M., & La Raja, R. J. (2013). Parties and elections. In V. Gray, R. L. Hanson, & T. Kousser (Eds.), *Politics in the American states: A comparative analysis* (10th ed., pp. 63–104). Washington, DC: CQ Press.
- Honig, M. I. (2006). Complexity and policy implementation: Challenges and opportunities for the field. In M. I. Honig (Ed.), *New directions in education policy implementation: Confronting complexity* (pp. 1–23). Albany, NY: State University of New York Press.
- Indiana Commission for Higher Education. (2011). *Frequently asked questions about higher education performance funding*. Retrieved from http://www.in.gov/legislative/senate_democrats/files/budgetdocs/BudgetHearing032411/CHE/CHEfaqsaboutperformancefunding.pdf
- Indiana Commission for Higher Education. (2013a). *Funding formula based on total appropriation over time*. Indianapolis, IN: Author.
- Indiana Commission for Higher Education. (2013b). *History of performance funding* (White paper). Indianapolis, IN: Author.
- Jones, S. M., Dougherty, K. J., Lahr, H., Natow, R. B., Pheatt, L., & Reddy, V. (2014). *Performance funding and organizational learning in three states*. New York, NY: Community College Research Center, Teachers College, Columbia University.
- Kerrigan, M. R. (2010). *Data-driven decision making in community colleges: New technical requirements for institutional organizations* (Doctoral dissertation). Teachers College, Columbia University, New York, NY.
- Kezar, A., Glenn, W. J., Lester, J., & Nakamoto, J. (2008). Examining organizational contextual features that affect implementation of equity initiatives. *Journal of Higher Education*, 79(2), 125–159.
- Lahr, H., Pheatt, L., Dougherty, K. J., Jones, S. M., Natow, R. S., & Reddy, V. (2014). *Unintended impacts of performance funding on community colleges and universities in three states* (CCRC Working Paper No. 78). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Lane, J. E. (2007). Spider web of oversight: An analysis of external oversight of higher education. *Journal of Higher Education*, 78(6), 615–644.
- Lane, J. E., & Kivisto, J. A. (2008). Interests, information, and incentives in higher education: Principal-agent theory and its potential applications to the study of higher education governance. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (vol. 23, pp. 141–179). Dordrecht, The Netherlands: Springer.
- Lederman, D. (2009, December 28). Performance (de-)funding. *Inside Higher Education*. Retrieved from <https://www.insidehighered.com/>

- Loeb, S., & McEwan, P. J. (2006). An economic approach to education policy implementation. In M. I. Honig (Ed.), *New directions in education policy implementation: Confronting complexity* (pp. 169–186). Albany, NY: State University of New York Press.
- Longanecker, D. (2012a). *Performance funding 2.0: From ideas to action* [PowerPoint presentation]. Retrieved from <http://www.wiche.edu/info/lac/2012/longanecker.pdf>
- Longanecker, D. (2012b). *State efforts to assure affordability in the new normal*. [Testimony before the U. S. Senate Committee on Health, Education, Labor, and Pensions]. Retrieved from <http://www.wiche.edu/PPT/LonganeckerTestimonyBeforeCongress9-13-2012.pdf>
- Lumina Foundation. (2011). *College productivity: Four steps to finishing first*. Indianapolis, IN: Author. Retrieved from http://www.luminafoundation.org/publications/Four_Steps_to_Finishing_First_in_Higher_Education.pdf
- Matland, R. (1995). Synthesizing the implementation literature: The ambiguity-conflict model of implementation. *Journal of Public Administration Research and Theory*, 5(2), 145–174.
- Mazmanian, D., & Sabatier, P. (1989). *Implementation and public policy* (rev. ed.). Latham, MD: University Press of America.
- McGuinness, A. C. (2003). *Models of postsecondary education coordination and governance in the states*. Denver, CO: Education Commission of the States.
- McLaughlin, M. W. (2006). Implementation research in education: Lessons learned, lingering questions and new opportunities. In M. I. Honig (Ed.), *New directions in education policy implementation: Confronting complexity* (pp. 209–228). Albany, NY: State University of New York Press.
- McLendon, M. K., Hearn, J. C., & Deaton, R. (2006). Called to account: Analyzing the origins and spread of state performance-accountability policies for higher education. *Educational Evaluation and Policy Analysis*, 28(1), 1–24.
- Miller, G. J. (2005). The political evolution of principal-agent models. *Annual Review of Political Science*, 8, 203–225.
- Moden, G. O., & Williford, A. M. (2002). Ohio's challenge: A clash of performance funding and base budgeting. In J. C. Burke (Ed.), *Funding public colleges and universities for performance: Popularity, problems, and prospects* (pp. 169–194). Albany, NY: Rockefeller Institute Press.
- Moe, T. M. (1984). The new economics of organization. *American Journal of Political Science*, 28(4), 739–777.

- Moynihan, D. P. (2008). *The dynamics of performance management: Constructing information and reform*. Washington, DC: Georgetown University Press.
- National Conference of State Legislatures. (2014). Performance-based funding for higher education. Retrieved from <http://www.ncsl.org/issues-research/educ/performance-funding.aspx>
- Natow, R. S., Pheatt, L., Dougherty, K. J., Jones, S., Lahr, H., & Reddy, V. (2014). *Institutional changes to organizational policies, practices, and programs following the adoption of state-level performance funding policies* (CCRC Working Paper No. 76). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Offenstein, J., & Shulock, N. (2010). *Taking the next step: The promise of intermediate measures for meeting postsecondary completion goals*. Boston, MA: Jobs for the Future.
- Ohio Association of Community Colleges. (2013). *SSI allocation recommendations*. Columbus, OH: Author. Retrieved from <http://www.gongwer-oh.com/public/130/2yrfunding1-6.pdf>
- Ohio Board of Regents. (2009a). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2010 and fiscal year 2011 for use by: Community and technical colleges*. Columbus, OH: Author.
- Ohio Board of Regents. (2009b). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2010 and fiscal year 2011 for use by: University main campuses*. Columbus, OH: Author.
- Ohio Board of Regents. (2010). *State share of instruction: Final FY 2010 & 2011*. Columbus, OH: Author. Retrieved from http://regents.ohio.gov/financial/selected_budget_detail/operating_budget_1011/campus-ssi-allocations.pdf
- Ohio Board of Regents. (2011a). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2012 and fiscal year 2013 for use by: Community and technical colleges*. Columbus, OH: Author. Retrieved from <http://www.ohiohighered.org/files/uploads/financial/ssi/HANDBOOK%20CC.pdf>
- Ohio Board of Regents. (2011b). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2012 and fiscal year 2013 for use by: University main campuses*. Columbus, OH: Author. Retrieved from <http://www.ohiohighered.org/files/uploads/financial/ssi/HANDBOOK%20UM.pdf>

- Ohio Board of Regents. (2011c). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2012 and fiscal year 2013 for use by: University regional campuses*. Columbus, OH: Author. Retrieved from <http://www.ohiohighered.org/files/uploads/financial/ssi/HANDBOOK%20UB.pdf>
- Ohio Board of Regents. (2012). *Recommendations of the Ohio Higher Education Funding Commission*. Columbus, OH: Author.
- Ohio Board of Regents. (2013a). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2014 for use by: Community and technical colleges*. Columbus, OH: Author. Retrieved from <https://www.ohiohighered.org/node/2519>
- Ohio Board of Regents. (2013b). *State share of instruction handbook: Providing the methodology for allocating state share of instruction funds for fiscal year 2014 for use by: University regional and main campuses*. Columbus, OH: Author. Retrieved from <https://www.ohiohighered.org/node/2519>
- Ohio Board of Regents. (2013c). *State share of instruction: Draft formula allocation. FY 2014 formula allocation*. Columbus, OH: Author. Retrieved from <https://www.ohiohighered.org/node/2519>
- O'Neal, L. M. (2007). *Performance funding in Ohio's four-year institutions of higher education: A case study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. AAT 3272928)
- Petrick, R. (2010, February). *Funding based on course completions: The Ohio model (v. 1.0)*. Presentation to the Texas Higher Education Coordinating Board, Austin, TX.
- Pressman, J. L., & Wildavsky, A. (1973). *Implementation*. Berkeley, CA: University of California Press.
- Radin, B. A. (2006). *Challenging the performance movement: Accountability, complexity, and democratic values*. Washington, DC: Georgetown University Press.
- Reindl, T., & Jones, D. P. (2012). *Raising the bar: Strategies for increasing postsecondary educational attainment with limited resources* [PowerPoint presentation]. Retrieved from <http://www.nga.org/files/live/sites/NGA/files/pdf/1206RedesignJonesReindl.pdf>
- Reindl, T., & Reyna, R. (2011). *From information to action: Revamping higher education accountability systems*. Washington, DC: National Governors Association Center for Best Practices. Retrieved from <http://www.nga.org/files/live/sites/NGA/files/pdf/1107C2CACTIONGUIDE.pdf>

- Reddy, V., Lahr, H., Dougherty, K. J., Jones, S. M., Natow, R. S., & Pheatt, L. (2014). *Policy instruments in service of performance funding: A study of performance funding in three states* (CCRC Working Paper No. 75). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Rothstein, R. (2008). *Holding accountability to account: How scholarship and experience in other fields inform exploration of performance incentives in education* (Working Paper 2008-04). Nashville, TN: Vanderbilt University, Peabody College, National Center on Performance Initiatives.
- Sabatier, P. A. (1986). Top-down and bottom-up approaches to implementation research: A critical analysis and suggested synthesis. *Journal of Public Policy*, 6(1), 21–48.
- Shulock, N., & Jenkins, D. (2011). *Performance incentives to improve community college completion: Learning from Washington State's Student Achievement Initiative* (A State Policy Brief). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Smith, K. B., & Larimer, C. W. (2009). *The public policy theory primer*. Boulder, CO: Westview Press.
- Spillane, J. P., Reiser, B. J., & Gomez, L. M. (2006). Policy implementation and cognition: The role of human, social, and distributed cognition in framing policy. In M. I. Honig (Ed.), *New directions in education policy implementation: Confronting complexity* (pp. 47–63). Albany, NY: State University of New York Press.
- Stokes, K. (2011, December 1). Indiana to base larger portion of college funding on performance. *StateImpact Indiana*. Retrieved from <http://stateimpact.npr.org/indiana>
- Sunderman, G. L., & Kim, J. S. (2007). The expansion of federal power and the politics of implementing the No Child Left Behind Act. *Teachers College Record*, 109(5), 1057–1085.
- Tandberg, D. A., & Hillman, N. W. (2014). State higher education performance funding: Data, outcomes, and policy implications. *Journal of Education Finance*, 39(3), 222–243.
- Tennessee Higher Education Commission. (2011a). *Outcomes based formula model data definitions*. Nashville, TN: Author.
- Tennessee Higher Education Commission. (2011b). *Outcomes based formula explanation*. Retrieved from http://tn.gov/thec/complete_college_tn/ccta_files/outcomes_based_ff/Outcomes_Based_Formula_Explanation.pdf
- Tennessee Higher Education Commission. (2012a). *2012–13 outcomes formula model* [Spreadsheet]. Retrieved from http://www.tn.gov/thec/Divisions/Fiscal/funding_formula/dynamic_model/2012-13%20Outcomes%20Formula%20email.xls

- Tennessee Higher Education Commission. (2012b). *Outcomes based formula model data definitions (Revised 6-27-2012)*. Retrieved from http://www.state.tn.us/thec/Divisions/Fiscal/funding_formula/Detailed%20Outcomes%20Formula%20Definitions%206-27-12.pdf
- Tennessee Higher Education Commission. (2014a). *2014–2015 outcomes-based funding formula* [Spreadsheet]. Retrieved from http://www.state.tn.us/thec/Divisions/Fiscal/funding_formula/dynamic_model/2014-15%20Outcomes%20Formula%20-%20EMAIL.xlsx
- Tennessee Higher Education Commission. (2014b). *Tennessee Higher Education Commission fact book 2013–2014*. Nashville, TN: Author.
- U.S. Census Bureau. (2012). *Statistical abstract of the United States: 2012*. Washington, DC: Government Printing Office.
- U.S. Department of Education. (2012). *Action plan for improving measures of postsecondary student success*. Washington, DC: Author. Retrieved from <http://www.ed.gov/edblogs/ous/files/2012/03/Action-Plan-for-Improving-Measures-of-Postsecondary-Student-Success-FINAL2.pdf>
- Witham, K. A., & Bensimon, E. M. (2012). Creating a culture of inquiry around equity and student success. In S. D. Museus & U. M. Jayakumar (Eds.), *Creating campus cultures: Fostering success among racially diverse student populations* (pp. 46–67). New York, NY: Routledge.

Appendix A: Characteristics of Our Three States

Table A.1
The States Studied: Program, Political, and Socioeconomic Characteristics

Characteristic	Indiana	Ohio	Tennessee
1. Year PF adopted			
PF 1.0 program	2007	1995	1979
PF 2.0 program	2009	2009	2010
2. Public higher education sectors covered by PF 2.0 program	2 and 4 years	2 and 4 years	2 and 4 years
3. PF 2.0 (outcome indicators) share of state public higher education funding	6% of state higher education funding in FY 2013–2014.	80% of university funding and 50% of community college funding in FY 2013–2014	About 85–90% of state appropriations for higher education, with the rest accounted for by utilities, major equipment, etc.
4. State higher education governance structure at the time of enactment of PF 2.0 program			
State coordinating board for all public higher education in the state	X	X	X
Public universities: Governing boards for <i>each</i> public university or university system in state	X	X	X (U of Tennessee 5 campuses)
Public 2-year colleges: Governing board for <i>all</i> public 2-year colleges	X		X (all public 2-year colleges & non-UT universities)
Public 2-year colleges: Governing board for <i>each</i> public 2-year college		X	
5. Population (2010)	6,484,000	11,537,000	6,346,000
6. Personal income per capita (2010)	\$34,943	\$36,395	\$35,307
7. Persons 25 years and over with bachelor's degree or more (2009)	22.5%	24.1%	23.0%

Sources:

- 1, 2. Dougherty & Reddy (2013).
3. Authors' interviews.
4. McGuinness (2003) and authors' interviews.
5. U.S. Census Bureau (2012).
6. U.S. Census Bureau (2012). Figures are in current dollars. U.S. average is \$40,584.
7. U.S. Census Bureau (2012). Average for the United States is 27.9 percent.

Appendix B: Performance Funding Programs in Indiana, Ohio, and Tennessee

The performance funding programs in our three states are all PF 2.0 programs—that is, they all involve embedding performance funding indicators in the base state funding for higher education. However, the programs differ considerably in the amount of state funding they provide based on performance indicators and in the precise way they embed the indicators. Tennessee and Ohio use a formula to determine state funding for higher education operations, and about four fifths of the funding of those operating appropriations is based on performance indicators. In Indiana, however, performance funding involves a much smaller amount (6 percent of state operational funding), and that funding involves both bonus funding and withheld funding that is paid back based on performance.

Indiana

Indiana first adopted performance funding in 2007 in the form of a bonus on top of the base state funding for higher education (HCM Strategists, 2011). However, this program was quickly replaced in 2009 by a new program in which 5 percent of each institution's base allocation is withheld and then awarded based on performance on certain metrics. In the 2011–2013 biennium, this 5 percent withholding amounted to roughly \$61 million (Indiana Commission for Higher Education, 2013b, p. 8). In 2013, the state general assembly decided to hold performance funding at 6 percent for both fiscal years 2014 and 2015 but changed the allocation method. The 6 percent devoted to performance funding was split between 3.8 percent in “new money” and 2.2 percent from funds withheld from institutional appropriations. The portion that is withheld is put into a funding pool, and institutions can then earn back some or all of that withheld funding, depending on how well they perform during the year and how well other institutions perform (Authors' interviews IN).

The performance funding indicators are designed to measure change over time, based on comparing two three-year averages of institutional performance (Indiana Commission for Higher Education, 2013b). For each metric, the performance funding formula takes the average performance across three years and compares it to the average for the preceding three years (e.g., for determining funding withheld in 2012, the average number of degree completions each year from 2009–2011 compared to the average

number of completions each year between 2006–2008). If an institution’s performance does not improve, the funding formula simply counts their improvement as “zero.” An institution’s allocation through the performance funding formula is based on how well its performance compares to the performance of all other comparable institutions. For the 2013–2015 biennium, it is possible for the overall effect of performance funding to be a loss if an institution (1) wins only a small portion of the new money bonus and (2) is not able to earn back all of the 2.2 percent that was withheld to help fund the performance funding program. Moreover, an institution is not funded for its performance if its overall rate of completion drops between the two three-year averages (even if the overall number of completions increased). In total, a school’s eventual state appropriation includes base funding (which can fluctuate from year to year based on enrollment), new money that is earned on the basis of the performance indicators, and the portion of the funds withheld the year before that the institution was able to win back based on its performance in the previous three years.

The performance funding indicators Indiana has used have changed each biennium. However, certain indicators have persisted (Indiana Commission for Higher Education, 2013b):

- change in number of degrees awarded (2009–2011, 2011–2013, 2013–2015 biennia);
- change in number (or rate) of resident, undergraduate, first-time, and full-time students graduating on time (2009–2011, 2011–2013, 2013–2015);
- change in degree completion by low-income students (2009–2011, 2011–2013, 2013–2015); and
- change in number of successfully completed credit hours (2009–2011, 2011–2013).

Over the years, these four indicators have accounted for 70 to 84 percent of the performance funding allocation. The Indiana Commission for Higher Education added two new metrics in the 2013–2015 biennium: an institutional defined productivity metric and high-impact degree completion.

Ohio

Ohio established two performance funding programs in the mid-1990s and then replaced them with a new program established in 2009. In 1995, Ohio adopted the Performance Challenge, which—though largely not a performance funding program—rewarded community colleges, technical colleges, and branch campuses based on the number of students who transferred or relocated after completing at least 15 quarter hours or 10 semester hours of coursework and on the number of transfer or relocated students who completed baccalaureate degrees (Dunlop-Loach, 2000, Appendix B). The Performance Challenge was abandoned in 2000 (Moden & Williford, 2002, pp. 174, 176).

In 1997, Ohio established the Success Challenge via a funding proviso in the budget bill for the 1997–1999 biennium (HB 215, passed in 1997). Until it ended in 2009, the Success Challenge provided a bonus to universities based on the number of students who earned baccalaureate degrees. Two thirds of the bonus was based on the number of at-risk students graduating in any year; one third was based on number of any students who graduated within four years. The metric was *the number graduating* and not the graduation rate (percentage graduating) within four years (Moden & Williford, 2002, pp. 173–178). The Success Challenge began small, with \$2 million in FY 1997, but funding rose rapidly in subsequent years, peaking at \$56 million in FY 2004. The money was unrestricted; it could be included in the institutions’ overall budget and used in any way the institution elected (Dougherty & Natow, in press; O’Neal, 2007, pp. 49, 179–189).

In 2009, Ohio passed a budget bill embedding performance indicators in the state’s formula for funding higher education operations. As a result, the Success Challenge was terminated. For the public universities, the state determined that 80 percent of state operational funding would be based on course and degree completions, with the remainder being set aside for doctoral and medical education. The degree completion share rose from 15 percent in FY 2011 to 50 percent in FY 2013 (Alstadt, Fingerhut, & Kazis, 2012; Ohio Board of Regents, 2011b, 2012, 2013b). Meanwhile, the proportion based on course completions dropped from 65 percent in FY 2011 to 30 percent in FY 2013. (The 20 percent set aside for doctoral and medical education remained steady.) For the 24 regional campuses of the state universities, funding initially was based solely on course completions. These campuses will become subject to the

same formula as the university main campuses in FY 2014 (Ohio Board of Regents, 2011c, 2013b). Course and degree completions for the university main and regional campuses are weighted by the cost of programs and whether students are at risk, defined initially in terms of eligibility for state need-based aid but later expanded to include other categories of at-risk students as well (Ohio Board of Regents, 2011c, 2013b; Petrick, 2010).

For community colleges, the proportion of the state formula allocated on the basis of performance indicators started at 5 percent in FY 2011, jumped to 50 percent in FY 2014, and will rise to 100 percent in FY 2015 (Ohio Association of Community Colleges, 2013; Ohio Board of Regents, 2011a, 2012, 2013a). For fiscal years 2011 through 2013, the performance indicators took the form of “success points”: (1) number of students completing developmental English and math and subsequently enrolling in a college-level course in those subjects; (2) number attaining certain credit thresholds in a given year; (3) number who earn at least an associate degree, from that institution, in a given year; and (4) number who transfer (that is, enroll for the first time at university having completed at least a certain number of semester credit hours of college-level coursework at a community college). Degree completions are weighted by program costs. There has not been any weighting for whether students are at risk. In FY 2014, course completions accounted for 25 percent of the state funding formula for community colleges, the success points made up another 25 percent, and the enrollment-based share dropped to 50 percent (Ohio Board of Regents, 2013a). For FY 2015, a Community College Funding Consultation led by the Ohio Association of Community Colleges has recommended that success points continue to account for 25 percent, course completions rise to 50 percent, and degree completions (previously part of the success points) account for 25 percent. Enrollments would cease to be part of the formula (Ohio Association of Community Colleges, 2013).

Universities and community colleges have been cushioned against losses by a stop-loss provision that ensured they would get at least a certain proportion of their state funding. For FY 2010, the stop loss was 99 percent for universities (community colleges were still not subject to the new formula). For FY 2011, the stop loss was 98 percent for universities and for community colleges. For FY 2012, the figures were 82.5 percent for

universities and 88 percent for community colleges (these figures reflected the end of federal stimulus funding). For FY 2013, the stop-loss figure was 96 percent for both kinds of institutions (Ohio Board of Regents, 2009a, p. 6; 2011a, p. 6; 2011b, p. 11). The stop loss was ended for universities in FY 2014 and will be ended for community colleges in FY 2015 (Ohio Board of Regents, 2013a, 2013b; Ohio Association of Community Colleges, 2013).

Tennessee

Tennessee has established two performance funding programs: a PF 1.0 bonus program that was adopted in 1979 and still operates today, and a PF 2.0 outcomes-based formula funding program that was adopted in 2010 (Dougherty & Reddy, 2013). The older program is intended to serve as a “quality assurance” bulwark for the new program (Authors’ interviews TN).

The Tennessee Higher Education Commission adopted performance funding for the state’s public two- and four-year higher education institutions in 1979 (Dougherty & Natow, in press; Dougherty, Natow, Bork, Jones, & Vega, 2013). Funds were first allocated to institutions using performance funding in FY 1980. Under that system, higher education institutions could earn a bonus of 2 percent over and above their annual state appropriations for achieving certain goals based on five performance indicators: program accreditation (proportion of eligible programs in the institution’s inventory that are accredited); student major field performance (student performance as assessed by major field examinations); student general education performance; evaluation of instructional programs (based on surveys of current students, recent alumni, or employers); and evaluation of academic programs (by peer review teams of scholars from institutions outside the state and/or practicing professionals in a field) (Banta, 1986, pp. 123–128; Bogue & Johnson, 2010). Tennessee added eight performance funding indicators and dropped four between 1979–1980 and 2009–2010. In addition, the percentage of additional funding that institutions could earn based on performance rose from 2 percent to 5.45 percent of the base state appropriation (Bogue & Johnson, 2010; Dougherty & Natow, 2010; Dougherty & Natow, in press).

In 2010, the Tennessee legislature passed the Complete College Tennessee Act, part of which provided for a dramatic redesign of the basic higher education funding

formula that would embed performance indicators in that formula (Dougherty, Natow, et al., 2014; Dougherty & Natow, in press). During the first year of the new system's operation in FY 2011, university funding was based on the following indicators: numbers of students reaching 24, 48, and 72 hours of credit; research and service expenditures; number of degrees awarded (bachelor's and associate, master's and education specialist, and doctoral and law degrees); number of degrees per full-time equivalent (FTE) student; number of transfers with at least 12 credit hours; and six-year graduation rate (Tennessee Higher Education Commission, 2011b, p. 1). Community colleges were funded based on somewhat different criteria: number of students reaching 12, 24, and 36 hours of credit; workforce training contact hours; number of dual enrollment students; number of associate degrees and certificates granted; number of awards per FTE enrollments; job placements; number of transfers with 12 credit hours; and remedial and developmental success. In addition, an institution is eligible for a 40 percent bonus for credit and degree completion for low-income and adult students. To protect institutions, the new program has been gradually phased in over a three-year period, with the phase-in ending after FY 2014 (Dougherty & Natow, 2010; Dougherty & Natow, in press; Tennessee Higher Education Commission, 2011a, 2011b, 2012a, 2012b).

The Tennessee formula and allocation process is quite complex. Each indicator is weighted, but each institution has different weights assigned to each indicator by the Tennessee Higher Education Commission based on a variety of factors, including, but not limited to, the institution's preferences and Carnegie classification. Three-year rolling averages are first scaled, then multiplied by institution-specific weights, and finally totaled for institutional weighted outcomes totals. These totals include extra weighting for adult learners and low-income students on indicators for credit accumulation and degree production (Tennessee Higher Education Commission, 2011b, 2012a, 2012b). The institution's total weighted outcomes value is then multiplied by the average faculty salary, as determined by Carnegie classification and by the Southern Regional Education Board. Fixed costs and equipment costs are added to create a formula subtotal. At this point, the institution's performance funding allocation is calculated by multiplying the institution's percentage on the program indicators by 5.45 percent of the institution's subtotal. This is added to the subtotal to give the institution's total. The formula then

assumes a 55/45 subsidy/fee policy, so the total is then multiplied by 55 percent, out-of-state tuition is deducted, and there is finally a budget recommendation by the Tennessee Higher Education Commission. For the 2014–2015 appropriation, the legislature funded 62.8 percent of the Tennessee Higher Education Commission’s recommendation (Tennessee Higher Education Commission, 2014a).