Implementing Childhood Obesity Policy in a New Educational Environment: The Cases of Mississippi and Tennessee

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With recent estimates suggesting that 31.7% of children aged 2 to 19 years and 34.2% of adolescents are overweight or obese, the childhood obesity problem has become one of the defining health and social issues of our time. In addition to the physical, psychological, and social problems that overweight children frequently experience, obesity has become a leading cause of preventable deaths in the United States, with only tobacco use posing an equally large, potentially reversible, long-term health threat.

It is clear that increasing levels of physical activity and altering nutritional intake constitute the most effective strategies toward reversing childhood obesity rates. To this end, hundreds of policies have been developed at state and federal levels in recent years in attempts to increase levels of activity and improve the nutritional value of food that children consume. Predictably, the majority of such legislation has been directed at schools. However, there is strong evidence that, concerns about childhood obesity and overweight have not led to widespread adoption of state- and district-level policies particularly at the middle- and high-school levels.

One area that policymakers have focused upon is the provision of physical education (PE) in schools, seen as a natural setting in which to enhance all children’s activity levels, irrespective of access to facilities or athletic ability. Indeed, influential actors, such as US Surgeon General Regina Benjamin, Robert Wood Johnson Foundation President Risa Lavizzo-Mourey, President Barack Obama’s Childhood Obesity Taskforce, and First Lady Michelle Obama’s Let’s Move! Campaign, have identified improvements to the quantity and quality of PE as being key components of strategies intended to reverse the upward trend in childhood obesity. These sentiments have been accompanied by a substantial increase in legislation over recent years with 90% of states now requiring high school PE. However, despite its prevalence, there is compelling evidence that such legislation is having little effect on levels of PE participation, particularly among older students.

Therefore, the purpose of our research was to investigate the ways in which stakeholders within schools responded to new legislation designed to increase levels of physical activity and improve the quality of PE in high schools in Mississippi and Tennessee, states with among the highest levels of childhood obesity and obesity-related illnesses in the country. We focused on high-school students because, although they are more able to understand the importance of a healthy lifestyle, they also have higher levels of overweight and obesity than do younger children. Furthermore, most research on children’s health has focused upon elementary- and, to a lesser degree, middle-school children; little research has examined the impact of obesity-related policy on high-school children. We offer theoretical and practical insights into why these policies have proven largely ineffective, and provide recommendations for bringing about the organizational and institutional changes required for more effective future policy formulation and implementation.

METHODS

To capture the ways in which individuals shape, and are affected by, new policy implementation, we adopted a longitudinal qualitative research design that involved the construction of separate case studies for each of the 8 schools in our study. This approach was selected because a decision to adopt and implement a new policy is a process, not a single event, and, thus, must be studied as such. To gain as broad an insight as possible into the effects of the new policies, we wanted to study schools of different sizes with a wide variation in social and demographic characteristics, including being located in urban, suburban, and rural settings and serving some of those students most at risk for childhood obesity (in this case, children from low-income areas).
neighborhoods and those of African American descent).

With these criteria in mind, we consulted with state-level officials and university faculty members with a strong understanding of high schools in Mississippi and Tennessee to gain suggestions of sites that would be good candidates for our study. We then contacted the principals at the 8 schools selected and invited them to be involved in the study. Some of the principals were known to members of the research team from other professional interactions, which likely helped to ease our access into some of the research sites. As a further incentive, we were able to offer each principal $250 over each of the first 2 years of the study to be spent on PE equipment for his or her school. Seven principals readily agreed to work with us; 1 did not respond to several requests, and so his school was replaced with another with very similar demographics (Table 1). The principals were important not only as sources of data but also as gatekeepers who provided us with unfettered access to school premises and personnel to carry out interviews and observe school-based activities.

Our focus was on 3 pieces of legislation that were intended to increase levels of physical activity, most notably through changes to PE programs. Although they were comprehensive in nature, we focus here on the specific aspects that pertained to high schools. Mississippi Public School Accountability Standard 32,20 mandated in 2004, moved PE from being an optional to a required course offering for high-school students. The Mississippi Healthy Students Act (SB 2369),21 signed into law in 2007, required that high-school students have 1 semester of PE during their 4 years at high school to graduate. In Tennessee, the Coordinated School Health Extension Act (HB3750),22 enacted in 2006, required students of all grade levels to engage in 90 minutes of physical activity per week at school, an extension of the previous requirement that high-school students have 1 semester of PE. (For comparison purposes, the National Association for Sport and Physical Education recommends that high school—age children have PE daily and accumulate 225 minutes of PE per week23). Our research commenced in the fall of 2006 and culminated in the spring of 2009 giving us 3 full academic years of real-time data.

### Data Collection

We collected data from 5 sources: semi-structured interviews with adults, focus groups of students, nonparticipant observations, internal documents, and external documents.

Data analysis comprised 3 main stages that were repeated several times in a circular manner. Stage 1 consisted of developing narratives that described the ways in which the new policies were perceived and enacted in each school. Stage 2 involved coding the data to, collection and to facilitate timely comparisons across schools, something that was further achieved by regular full-team meetings. This allowed us to develop more detailed understanding of the schools than if the team had been widely spread across all 8 sites.

In each school, we interviewed the principal and PE teachers multiple times to track their responses to the new legislation over time. We also interviewed policymakers, administrators, classroom teachers, parents, students, and other stakeholders. Rather than follow a predetermined interview schedule, we engaged in a purposeful sampling strategy whereby we let our emergent understanding of what was happening in each school determine whom we should interview, and when. Interviews with adults were carried out individually and lasted, on average, 1 hour; the student focus group interviews lasted between 30 and 60 minutes and included 4 to 7 students at a time. In sum, we completed 124 one-on-one and 21 focus group interviews, all of which were recorded and transcribed verbatim. Our questions centered on knowledge, understanding, and opinions of the new policies, and, if appropriate, strategies of policy implementation, avoidance, or resistance.

We also engaged in observation of school-based activities to allow us insight into each school’s culture and to more fully comprehend how the new policies were affecting school-based activities. For example, we observed PE classes using a purpose-designed instrument to ascertain any changes in levels of physical activity. We took field notes during site visits and wrote them up within 24 hours whenever possible.17 Furthermore, we analyzed “internal” documents such as federal-, state- and district-level policies, memoranda, school curriculum, newsletters, lesson plans, and state directives, and “external” documents including popular press articles about childhood obesity and obesity-related activities taking place within schools.

### Data Analysis

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### Table 1—Demographic Information for Participating High Schools in Mississippi and Tennessee, 2006–2009

<table>
<thead>
<tr>
<th>High School</th>
<th>State</th>
<th>Locale</th>
<th>Total Students, No.</th>
<th>White, %</th>
<th>Black, %</th>
<th>Other, b</th>
<th>Economically Disadvantaged, c, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>TN</td>
<td>Inner city</td>
<td>578</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>91</td>
</tr>
<tr>
<td>Jefferson</td>
<td>TN</td>
<td>Inner city</td>
<td>1402</td>
<td>16</td>
<td>80</td>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td>Montlake</td>
<td>TN</td>
<td>Rural</td>
<td>1048</td>
<td>74</td>
<td>23</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>Smith</td>
<td>TN</td>
<td>Rural</td>
<td>1351</td>
<td>80</td>
<td>18</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>Franklin</td>
<td>MS</td>
<td>Suburban</td>
<td>1845</td>
<td>73</td>
<td>25</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Rogers</td>
<td>MS</td>
<td>Suburban</td>
<td>1885</td>
<td>72</td>
<td>22</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>MS</td>
<td>Rural</td>
<td>268</td>
<td>57</td>
<td>40</td>
<td>3</td>
<td>83</td>
</tr>
<tr>
<td>Piney Woods</td>
<td>MS</td>
<td>Rural</td>
<td>642</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>57</td>
</tr>
</tbody>
</table>

Note. Compiled from data listed at http://www.greatschools.org and school administrators at the commencement of the study. These data did not change significantly over time.

aIncludes Hispanic, Asian, American Indian/Alaskan Native, and Pacific Islander.

bBased on standard criteria of qualification for partially or completely subsidized school meals.
first, identify first-order concepts that emerged consistently from the data, and then to uncover relationships among these first-order concepts to generate second-order themes that provided an overarching structure for what we uncovered over the 3 years of the study.25,26 This resulted in the 5 themes detailed in the next section. In stage 3, we carried out member checks, peer debriefs, and detailed in-team discussions to refine and check the robustness of our conclusions.27

RESULTS

The 3 new policies that we focused upon were designed to significantly increase the amounts of physical activity that all students engage in while at school. This was intended to be accomplished, in substantive part, through the provision of more opportunities for, and quality of, PE. However, in 7 of the 8 schools that we studied, implementation of the new policies was avoided entirely. This was consistent across schools that varied in race, size, location, economic base, and level of academic achievement. In the eighth school, Rogers, implementation was also avoided in year 1, but subsequently embraced in years 2 and 3. Four main barriers to implementation emerged from our data: the prioritization of standardized testing, varsity sport provision, resource constraints, and policy overload.

Prioritization of Standardized Testing

The most noticeable constraint to policy implementation that emerged from our data in all 8 schools was the emphasis on standardized testing. In reviewing educational policy documents and research, we traced an increased interest in the scholastic performances of school children and their teachers to the release of A Nation at Risk: The Imperative for Educational Reform by the US Department of Education in 1983.28 Before the publication of this report, there was considerably less mention of concern with measuring and comparing student performances (see, for example, Huberman and Miles’ landmark study of the implementation of school innovations in the mid- to late-1970s29). However, from the publication of A Nation at Risk, standardized testing can be seen to exerting an increasing influence on school activities (see, for example, the influence of standardized testing on the North Carolina School Health and Tobacco Education Project implemented in the late 1980s30). Despite this, policy interventions that sought to address social issues such as HIV/AIDS, drug abuse, and smoking did manage to gain traction within school environments.30

The emphasis on standardized testing was reinforced in the No Child Left Behind Act (NCLB),31 signed into law in 2002. The intent of this legislation was to reduce scholastic disparities among children from different demographic groups and to hold teachers and administrators more directly accountable for the performances of their students. The school-level data that we collected indicated that the emphasis on standardized testing is having a significantly negative effect on the implementation of the childhood obesity policies. Administrators, teachers, and students across the 8 schools that we studied repeatedly informed us that standardized test performances have become the overarching concern of classroom-based teachers and school administrators to the detriment of other subject areas, including PE. As the principal at Adams informed us:

With No Child Left Behind, your principals want more English, math, and science emphasis to pass the tests. So, what’s being phased out is music, art, and PE. Your elective classes are being phased out so we can hire more test subject teachers and have smaller classes.

As the quote suggests, we consistently found that PE was accorded secondary status compared with other subject areas. For example, although several principals reiterated the view about striving to keep class sizes in test subject areas as low as possible, no such concern was exhibited toward PE. Candice, a student at Jefferson, told us how “there could be 5 classes [in the gym at one time],” something supported by an interview with a PE teacher at the school who expressed her frustration with having so many students in class at the same time. Our observations supported this with Jefferson regularly having class sizes of 60 to 90 students, despite state law mandating that they should not exceed 35 students.32

The use of gymnasium bleachers for “study halls” during PE classes was prevalent across several schools in our study as a means to try to keep those subjects in which students were given standardized tests relatively small. This was particularly cited as a strategy by principals for dealing with overcrowding (e.g., Rogers) or when classroom teachers were ill (e.g., Adams). As we observed, in such situations PE teachers forwent their teaching role and simply tried to maintain order.

There were also clear efforts by principals to avoid increasing the number of PE classes. For example, the principal at Gold Coast labeled varsity basketball practices as PE classes, and then told us, “[the new policy] hasn’t affected [us] much anyway because . . . we were already doing it to start with.” At Piney Woods, an existing required health course was renamed “Health and PE” without the addition of a meaningful PE component. Another approach that we witnessed was for school officials to account for required physical activity with existing practices. According to a Tennessee Department of Education official, “The schools are gonna say, ‘gosh, we can get 30 minutes [of activity] every day just walking from class to class,’” thus negating the need for curricula changes, a strategy espoused by the curriculum coordinator at Montlake.

The major emphasis on standardized test scores was purposively developed in all 8 schools. For example, at Piney Woods, Franklin, Smith, and Rogers, the overall performances of the schools on standardized test evaluations were prominently displayed on external and internal signs leaving little doubt as to what was valued at the school. As a PE teacher from Smith informed us, “Principal Stevens stresses academics all the time. . . . We really want our academics to be top notch. Our PE department is not stressed very much at all.” This was a view that clearly permeated to students. A student from Adams said “[PE] class is a waste of time because you could be . . . taking other classes, other foreign languages, and stuff instead of in the gym playing basketball or walking.”

Varsity Sport

The prevalence and profile of high-school varsity sport, particularly football and basketball, is well recognized across the United States. Less well documented are the effects that varsity sport has on the operation of schools. We found
several ways in which the predominance of varsity sport negatively affected the provision of PE in general, and the implementation of the new obesity-related policies in particular.

We observed a marked difference in the facilities accorded varsity sport teams compared with regular PE classes. At Franklin, a wealthy parent had donated $250,000 to develop a weight training room for the football team. According to a PE teacher there, “it’s just for football; if we used it for regular class time, the students might tear it up.” In contrast to this expansive facility filled with state-of-the-art training equipment, the weight room available for use in regular PE classes was very small with a correspondingly limited set of old free-weight equipment. Although this was an unusual example, it demonstrates the general prioritization of facilities for varsity-level sport over PE classes, something that was repeated across our study. For example, at Gold Coast and Piney Woods, use of the gymnasium for PE classes was constrained by the scheduling of varsity basketball practices during the school day.

The prioritization of varsity sport over PE was well known within the schools in our study, as a classroom teacher from Gold Coast explained, “When we say PE, we mean basketball. . . . Having a good basketball team is important; PE is not.” Such a position was generally not seen as problematic, and was justified by the principal at Smith:

I don’t care what anybody says, when you win [at] football, it sets the precedence [sic] for your students’ spirit and school pride and things like that, and that carries over into how they perform in the classroom.

In all of the schools that we studied, most of the PE staff also coached varsity teams. Invariably, they identified themselves, and were identified by others, as “Coach.” We observed several consequences of this. For example, coaches were sometimes hired to fill PE teaching vacancies on the basis of their coaching prowess rather than on their teaching acumen, as the principal at Adams explained:

I’m going to add another PE teacher . . . I have the need for another football coach, and the person that I have in mind has a PE certification. So, that’s why that person was chosen.

Furthermore, most PE teachers in our study exhibited behaviors that suggested that they were more interested in improving the performance of their varsity teams than in increasing levels of physical activity across the student body. For example, we observed a PE teacher spending an entire lesson period in his office reviewing video of a varsity basketball game while a small number of students played basketball and the others sat in the bleachers and talked or read. We were told by another PE teacher that he does not allow students on the gym floor after he has cleaned it on the morning of basketball games. Likewise, 2 students at Smith told us how they “had to, like, paint the field and stuff. . .. We . . . basically, had to do all the coaches’ chores” during PE classes. Finally, this prioritization of varsity sport over PE was reflected in the provision of PE curricula that were not diverse enough to appeal to a broad swath of students. In the schools in our study, PE classes usually consisted of sport-related activities such as cross-country running, weight training, calisthenics, or basketball. Indeed, PE class was often viewed as a way to get extra training for varsity athletes. Girls seemed particularly disadvantaged by this, with complaints about the PE curriculum widespread in our student focus groups, exemplified by this quote from Demetra, a student at Adams: “I really don’t like [PE] . . . we don’t really play anything but basketball, and I don’t know how to play basketball, so I just sit in the stands, and walk sometimes.”

Resource Constraints

A third issue that was perceived to be detrimental to the implementation of the new policies was a lack of resources. Staff at Adams, Piney Woods, Gold Coast, and Jefferson told us that they had insufficient resources to fully implement the new policies. As the principal at Montlake summed up, “I do not have the resources or personnel to fully comply with the new policies.”

Other resource complaints included a lack of indoor space, poor air conditioning, damaged equipment and facilities, and inadequate equipment budgets. All of these were described as reasons why more PE simply could not be accommodated. In some cases, the resource constraints were mentioned in the context of a general antipathy toward the new policies, as a PE teacher at Piney Woods informed us: “I [have] not seen any positive aspects of [the new policy]. We don’t have the facilities to do it. We don’t have the funds to build the facilities to do it.” Our observations did support the fact that some facilities were old and in need of repair, but we also found that there were usually large outdoor spaces that were consistently underused because, we were told, the weather was usually too hot or too cold. This occurs despite advocacy groups such as the Tennessee Obesity Taskforce recommending that children’s physical activity should occur outside as much as possible.33

Policy Overload

All of the principals that we interviewed pointed to the difficulty of implementing all of the required policies that they annually receive, with 1 principal estimating that he had received more than 50 new policy requirements over a single academic year. The inevitable consequence of this is that principals prioritize the policies that they will adhere to, based predominantly on perceived accountability and personal preference. As the principal at Adams informed us, “I’ve heard about [the new policy]. But I have not made any changes to accommodate it in what we do daily because I don’t know . . . exactly what the specifics are.” Likewise, the principal at Piney Woods stated, “I know we have a [new] policy. There is one on the books. I am not clear on the specifics.” Being able to pick and choose among mandated policies was explained by a Mississippi state education official who informed us: “[I]t’s not like you have a real big effort to implement these [new policies] because, from the state level, you really can’t monitor every school for compliance.” Thus, with so many policies vying for attention, those not perceived as important were highly unlikely to be implemented.

Policy Adoption

The themes that we recorded emerged consistently at all of the schools over the 3 years of the study. We did find, however, that in the second year of data collection, the principal at Rogers began to embrace the requirements of the new policy. This school was an interesting contrast in that, in the first year of our study, we documented the pressures, perceived constraints, and avoidance strategies outlined previously. The principal's...
aversion to both new policies was apparent: “Personally, I don’t believe schools are making kids fat. I think a large part of it is from the home and parents. . . Plus I’ve got so much to deal with; we’re just doing the best we can.” However, by year 2 of the study, the principal had become much more of an advocate for student wellness, stating that, “I want to be there right alongside parents, teaching [the students] basic skills for physical fitness.” The principal explained the catalyst for this change in an interview at the start of the second year of our study: “I went to a conference last spring. And they talked about health and wellness of staff and students, and so I dreamed up this plan.” To this end, he reassigned a recalcitrant PE teacher with little interest in a new curriculum to driver education, replacing him with a younger PE teacher with a great deal of enthusiasm and desire to engage students. The levels of student activity that we observed during PE classes increased markedly as a consequence. Other steps included an arrangement with a local fitness club to provide after-school exercise instruction for students and teachers and the creation of a walking club by teachers. These initiatives continued in year 3 of our study. However, Rogers was an exception; there were no similar strategies to enhance PE or physical activity offerings at any of the other 7 schools.

DISCUSSION

In line with recent acknowledgments of the need for more transdisciplinary research to help address health disparities across different populations,34 we drew upon the public health, health policy, education, and organizational studies literatures to develop explanations of our findings. This led us to 4 main insights with respect to enacting childhood obesity policy in schools.

Changing Educational Values

Our first point concerns the values underpinning US public education. As a greater emphasis has been placed on the utilization of standardized test scores to determine the quality of educational provision, so teachers and administrators have been held more directly accountable for children’s test performances. This has led to a reluctance to adopt policies that will increase the time allocated to PE; indeed, as the principal at Adams told us, there is evidence that PE, far from being increased, is actually being “phased out.” This has occurred in spite of the fact that research shows that increased activity time in general35–37 and instructional time spent in PE in particular38–40 does not diminish, and can even enhance, academic performances. Previous research in the field of education has highlighted how the values embedded in legislation such as NCLB have led to a preferencing of quantitative measures of student performance.41 However, the effects that this has had on the potential to realize public health goals within educational settings has been almost entirely absent from any debate. Thus, although enhanced PE offerings are seen as integral to initiatives promoted by the Robert Wood Johnson Foundation, the President’s Childhood Obesity Taskforce, and Michelle Obama’s Let’s Move! campaign, along with numerous state policies around the country, the changed school context has rarely been considered. Even when standardized testing has been acknowledged, discussion of how and why it influences the provision of PE has been absent.

In providing a theoretical explanation of our observations, we first drew on the concept of an institutional field, the “key suppliers, resource and product consumers, regulatory agencies and other organizations that produce similar services or products.”42(p148) The institutional field in our study comprised those agencies and individuals concerned with the development and delivery of education, including schools, legislative and regulative bodies, and affiliated groups such as parents and students. Importantly from our point of view, appropriate and acceptable activities within a field are guided by an institutional logic, the “broader cultural beliefs and rules that structure cognition and guide decision making.”43(p289)

Dating back to the late 19th century, the dominant institutional logic that underpinned action within the educational field was one that supported the promotion of a liberal approach to education.44 To this end, school curricula have emphasized not just scholastic development but also programs to curtail smoking and drug use, raise awareness of HIV/AIDS, and promote cultural, social, and physical development with art, health, and physical education classes. The dominant institutional logic that guided scholastic provision within this educational milieu we termed “holistic development.” However, a culture of academic accomplishment has supplanted the more holistic approach that was present for most of the past 120 years. This has resulted in the emergence of a new dominant logic that we have labeled “academic achievement” (AA). Interestingly, the influence of this logic is independent of a school’s socioeconomic or racial characteristics, size, or its level of academic performance. As our data show, and theory would predict, the effects of the AA logic at the school level have been profound, with administrators, teachers, and students internalizing the new educational values resulting in those policies perceived as inconsistent with the logic being largely subverted or ignored. This is an important point: it is not just the mechanics of introducing a curriculum that prioritizes performances on standardized tests that has altered the school environment. Rather, the values that underpin and legitimize educational activities have changed, with dramatic and far-reaching effect when it comes to the introduction of PE policies in the schools in our study.

Marginalization of Physical Education

Our second point stems from highlighting the marginalized nature of PE. As we have documented, even among PE teachers and students, there is a recognition that the dominant orientation of schools is toward academic achievement; PE, by contrast, is not valued. Given Huberman and Miles29 finding that successful innovations are closely associated with a school’s climate, and more recent work that has pointed to the ways in which favorable social environments are more strongly related to increased levels of physical activity than favorable physical environments,45 this finding is important: a school setting in which the pervasive attitude toward PE is not positive will result in reduced levels of student, parental, and staff engagement. By contrast, as we saw at Rogers, as the social environment changes, so students and teachers are more likely to become more active; in other words, the influence of the dominant institutional logic,
though profound and pervasive, is not necessarily immutable.

**The Effects of Varsity Sport**

Whereas PE is not highly valued, varsity sport is seen as a mechanism that can be used to enhance the profile and culture of the school. Paradoxically, despite the ostensibly strong links between PE and varsity sport, we found that the latter has a profoundly negative impact on the former, our third main insight. This was evidenced here in various ways, including the prioritization of facilities for use by varsity athletes rather than by regular students and the willingness of PE teachers to emphasize varsity sport rather than mass-participation activities during class time. This last point is perhaps the most important. An environment that is “loosely coupled”—in other words, one that accords great operational freedom to administrators and teachers—has allowed those delivering PE within the schools in our study the opportunity to operate almost independently, often with little oversight from either principals or state officials. This helps to explain our findings: PE teachers frequently exhibited greater concern for varsity team performances than for the needs of the broader student population, they provided a narrow curriculum, and often generated little enthusiasm among students. As the Surgeon General has noted, although programmed, repetitious exercises may work for adults, they are unlikely to inspire children to become more active.

Thus, the prospect of using PE to raise activity levels is unlikely unless PE teachers see their primary roles as rounded physical educators rather than as varsity coaches.

**Role of School Principals**

Our fourth point concerns how the implementation of policies designed to address childhood obesity are dependent upon the attitudes and actions of school principals. The “loose coupling” that we referred to previously has 2 effects that are of interest here: first, it allows principals to operate relatively independently; second, the difficulty in causally linking actions with outcomes allows principals to justify particular courses of action that may vary substantially from one school to the next. In making sense of the context in which they are operating, principals were able to rationalize their actions of policy avoidance as being consistent with the AA logic. This “sensemaking” was also informed by other characteristics of the environments in which principals operated. Issues such as resource constraints, inadequate facilities, overcrowding, and the sheer number of new policies with which principals were confronted, were all woven into a retrospective account that helped to justify why the new policies should be avoided or even contradicted. In this way, the administrators in our study were able to rationalize activities that ran counter to the new policies, such as labeling varsity team practices as PE classes, or counting the minutes students spend walking between classes as documentable physical activity. In this respect, the legitimacy of the new policies was challenged on a symbolic as well as a technical basis.

The determining role played by the school principal in the implementation of new policy is graphically illustrated by events at Rogers. In the first year of our study, 2006 to 2007, the principal at Rogers stated that he had avoided, and would continue to avoid, implementing the new policies. He justified his actions by pointing to pressures to maintain standardized test performances and the overcrowding in his school, and directed the responsibility for childhood obesity at children’s parents. However, when he became convinced of the need for schools to be involved in addressing childhood obesity, he became an advocate of the new policies. The building of a new school nearby that helped alleviate overcrowding was pointed to as a significant event in his revised sensemaking that allowed him to justify his changed course of action. These actions throw into relief the resistance to the new policies by the principals in the other schools in our study; clearly, new policies, even if mandated, are likely to be ineffective without a supportive principal.

**Potential Limitations**

One question that may arise from our work is the potential of bias in our findings stemming from the purposeful selection of the schools in our study. This was overcome in large part by the collection of data from schools that varied by geographic location (2 states; 4 counties; urban, suburban, and rural districts), size, academic performance, and the socioeconomic and racial profile of students, and in uncovering findings that were broadly consistent across all of the schools (with the exception of Rogers in years 2 and 3 of our data collection). As a consequence, we are confident that our findings are not artifacts of school- or community-level idiosyncrasies. Furthermore, none of the principals, nor any other individuals, involved in our study sought to control our access to data nor to influence our analyses. It is worth pointing out that all of the schools in our study are located in the mid-South of the United States, so there may be some regional factors at work that are not accounted for by our sampling framework. These might be addressed in fieldwork that examines high schools in other parts of the United States, and beyond, but we do believe that readers will be able to transfer our findings to other locales.

**Conclusions**

The expectation that public health problems can be addressed in schools in the same way as in years gone by is ill-founded. A new approach is required that recognizes the changed context and the corresponding pressures to which school administrators and teachers are exposed. Although individual action is possible by principals and PE teachers, it is greatly constrained by the systemic impediments that have developed, something yet to be widely recognized by policymakers and public health advocates. This helps to explain the observed disjuncture between policy formulation and implementation. There are 5 recommendations that emerge from this work.

First, we must recognize that the time when a new program will be straightforwardly implemented because of its intrinsic social value has passed. Rather, subjects such as PE that are viewed as not cohering with the AA logic have become marginalized. Furthermore, with the loose coupling that characterizes the educational system and with monitoring of policy implementation apparently too costly and time consuming to be carried out in a systematic manner, principals can avoid implementation with relative impunity. Thus, principals, along with other stakeholders—from policymakers to classroom teachers, from parents to students—need to be educated as to the beneficial effects that physical activity in general, and PE in particular, can have on...
student health and academic achievement. Furthermore, principals must be held accountable for the quality of PE programs in the same way that they are for those subjects included in standardized tests.

Second, the detrimental impact of varsity sport on PE cannot be underestimated. For instance, although there is no problem with PE teachers coaching varsity sport teams, PE teachers must be held accountable for delivering a balanced PE curriculum that appeals to a broad array of students; their incentive system should reflect this. Furthermore, school administrators must find ways to develop a culture in which PE and physical activity are celebrated in a similar way to the successes of varsity sport teams.

Third, the impact of the AA logic on the sensemaking and actions of principals is exacerbated by other structural constraints that are used to retrospectively justify particular courses of action. The emphasis on varsity sport, imposition of numerous new policies, overcrowding, or inadequate facilities are among factors that policymakers should now consider as impediments to effective policy implementation, even if they have not previously been viewed as being directly relevant to the policy being developed.

Fourth, legislation that is underfunded, not monitored, or runs counter to the dominant logic may be politically expedient but is unlikely to be implemented, and certainly not in the manner in which it is intended. If PE is indeed to play a major role in helping to overcome childhood obesity, it must be tied to central educational policy. The announcement by President Obama in his 2011 State of the Union Address that NCLB would be replaced “with a law that’s more flexible and focused on what’s best for our kids” provided an ideal opportunity to achieve this, though what would be included in the new legislation and how it would ultimately be implemented remained, at the time of writing, unclear.

Finally, policymakers must not assume that institutional environments are static. They must go beyond arms-length consultation with key actors, such as principals and PE teachers, and actively include them in crafting legislation. In this way, the constraints to action will be more likely to be laid bare, with correspondingly greater probability of policy that viably addresses key result areas in ways that can be effectively implemented. Without elevating the value placed on PE and adjusting the structures that facilitate its delivery, it must be questioned whether schools will ever be able to deliver, on a widespread basis, the gains in the battle against childhood obesity that many activists, researchers, and policymakers foresee.

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Contributors
J. M. Amis, P. M. Wright, and B. Dyson conceptualized and designed the study. All authors participated in data collection and analyses. J. M. Amis, P. M. Wright, B. Dyson, and J. M. Vardaman participated in writing the drafts of the article.

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Human Participant Protection
The research protocol was reviewed and approved by the University of Memphis’ institutional review board. All participants provided their informed consent to be interviewed in the case of students, permission for their involvement was obtained from their parents or legal guardians.

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