

Research Report of the Month
FEBRUARY 2004

Wilkins, J.L.M., Graham, G., Parker, S., Westfall, S., Fraser, R.G., & Tembo, M. (2003).

Time in the arts and physical education and school achievement.

Journal of Curriculum Studies, 35, 721-734.

Introduction

For physical educators who have been concerned about the impact of state-level "standards-based" reform on support for public school PE programs, the results produced by this study will not come as a complete surprise. There has been a considerable accumulation of research suggesting that time devoted to physical education is not somehow inimical to academic achievement as measured by performance on standardized tests. What is new here is the sophisticated method of deriving those reassuringly positive results, and the absolute clarity with which they underscore the nature of sound curriculum policy.

The Study

As with virtually all studies, this one has several limitations that constrain unguarded generalization to other settings. Nevertheless, this is work you can take to the bank (or to the school board) without concern that its implications will be too obscure for policy makers to grasp, or fear that the resident critics of educational research will find it riddled with fatal flaws.

The study involved collaboration among public school teachers, university professors, and graduate students. In that process, the investigation cut across the boundaries of academic disciplines as well as educational institutions. Financial support was provided by a grant from the Department of Teaching and Learning at Virginia Polytechnic Institute and State University. All data were collected during the 1999-2000 academic school year.

The study was stimulated by an all too familiar issue. There is divided opinion concerning whether elementary school students will perform better on high stakes academic achievement tests if school hours devoted to the untested subjects of art, music, and physical education are reduced or eliminated and (in theory, at least) shifted to study in the tested disciplines. The very real consequences of inadequate test results make this a matter of genuine concern for all stakeholders: students, parents, teachers, administrators, school districts, and policy makers at every level of education. While anyone with even a smidgen of savvy about educational research would immediately realize that the safe (and probably correct) position to take with regard to this issue is to say "it depends," that sort of equivocation is unhelpful when curriculum decisions are going to be made – for the next school year.

Since 1998, the State of Virginia had a high-stakes test in place for all public elementary school pupils at grades 3, 5, and 8 – in the so called "core" subject areas of mathematics, science, English, and social studies. For the students, the high stake was possible denial of a diploma, and for the school, the threat of withdrawal of accreditation. By the turn of the century, there was a sufficiently wide range of policy responses at individual schools (to retain, reduce, or eliminate time assigned to the untested "non-core" subjects of art, music, and PE), along with an adequate database of accumulated test scores for each school, to allow empirical questions to be asked about the efficacy of various strategies.

Design and Method

The present study raised the most obvious of questions:

1. How much time per week do elementary schools (K-5) in Virginia presently allocate to art, music, and PE taught by subject matter specialists?

2. To what extent has implementation of high-stakes testing altered that allocation policy, and what further changes can be anticipated in the near future?
3. Is there a relationship between the policy adopted and school-level student performance on the tests? Specifically, is there an inverse relationship indicating that less time devoted to art, music, and PE is associated with increased passing rates on the tests?

Survey forms were sent to 1167 elementary school principals across Virginia. A total of 547 usable forms were returned. Follow-up procedures suggested that the proportion of returned forms from each of the state's eight geographic regions closely matched the percentage of resident population in that region. While that does not eliminate the possibility of response bias in the sample, it does make gross misrepresentation based on geographic asymmetries much less likely.

Principals reported the weekly allocation of time for each subject, the change in that allocation since the previous year, and anticipated changes for the subsequent year. Test results for each participating school were obtained from the Department of Education. Even for those of us without intimate knowledge of statistics, it is not difficult to imagine the general nature of the analysis that followed. Before revealing the results, however, there are two questions that must be addressed.

Why did the investigators specify time allocated for instruction "by subject matter specialists," when we already know that some (or all) of the instruction in a given school may be provided by classroom teachers who are untrained in art, music, or physical education? If you are a teacher, you are likely to know the answer. Time actually devoted to special subject instruction by classroom teachers is enormously variable and almost impossible to track with any accuracy (and certainly not by a school principal). Specialist instruction, however, is relatively standardized and likely to be subject to reliable reporting. For that aspect of the study design, there simply was no other viable option for the investigators.

There is another problem, however, and if you already have identified it (or are even a little suspicious), please take a generous measure of extra credit. Would it not be true that school districts with more resources, a more stable and homogeneous student population, and location in a more supportive community context, would produce higher passing rates on the tests, and **also** be more likely to encourage enlightened curriculum policies that recognized the value of the arts and PE? If so, might not a true test of "keep or discard" be impossible because the result would be known in advance? Higher achievement produced by demographic and economic factors would be associated with larger allocations of school time to the untested subjects.

Fortunately, there are ways around that problem – once a careful numeric estimate could be assigned to the relative human, financial, and cultural capital that characterized the context of each school. Without getting into the details, those factors can be (and were) removed from (or, at least, be compensated for) in the analysis. With the impact of those unequal socio-cultural opportunities removed, what did the data show?

Results

1. There was no meaningful relationship between time allocated to art, music, and PE, and tested student achievement at the school-level.
2. More directly, there was no indication that cutting time devoted (by specialists) to art, music, and PE produced higher test scores. In elementary schools that did reduce or eliminate time allocations, no academic advantage was gained – and whatever profits might accrue from those untested subjects were reduced or lost for the children.
3. Generally, more time is allocated to PE than to art or music. In addition, there was no apparent relationship between time allocated to PE and the socio-cultural capital available to the school.
4. In the majority of Virginia's elementary schools, cutting PE had not been a favored strategy – and appeared unlikely to become so, at least for the near term.

Discussion

Close inspection of the data tables might lead one to conclude that if there is any relationship at all between time allocated for specialists to teach the arts and PE, and student test performance, it would lie in a positive direction – but such speculation is not allowed by the rules governing the statistics involved (nor was it encouraged by the authors). The authors do speculate that the reason most Virginia elementary schools have retained a substantial portion of the time allocated for untested subjects is that principals (in particular) value their unique contributions to overall education. My own experience suggests that there might be reasonable cause to dispute such a benign interpretation of the data – but let us not quibble over the fine points.

There also is the nagging problem of whether or not the time saved in schools where the arts and/or PE were cut was then actually applied so as to increase effective study time in the four tested subjects. It might have been politically popular (or necessary) to take such steps in some school communities, but not equally compelling for the principal to make wise use of the time thus made available. If that is true, then it remains theoretically possible that cutting in one area might lead to improved passing rates in another subject area – *given some hypothetical set of subsequent educational actions*.

That possibility, however, can only pose questions for another investigation. What we now can assert with confidence is that in Virginia, for the years examined in this study, reducing or eliminating specialist instruction for the arts and PE just did not yield the anticipated academic benefits. Accordingly, this study substantially adds to the weight of evidence indicating that denying children full access to a broad and humane education is not the best solution to the dilemmas created by high-stakes testing.

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