Fragmentation, Standardization, and the Wild (Mother) Goose Chase for Educational Productivity and Accountability

Brian White
Grand Valley State University

Follow this and additional works at: https://scholarworks.gvsu.edu/lajm

Recommended Citation
Available at: https://doi.org/10.9707/2168-149X.1827
Fragmentation, Standardization, and the Wild (Mother) Goose Chase for Educational Productivity and Accountability

In *Cheaper by the Dozen* (Gilbreth & Carey, 1984), Frank Gilbreth, Jr. and his sister, Ernestine Gilbreth Carey, tell the story of their rather unusual family of origin. I’m sure they would have had plenty of fascinating reminiscences even if all that had made their family unique had been the even dozen kids tromping around their Montclair, New Jersey home in the early years of the 20th century; but there’s much more to the story, as readers of *Cheaper by the Dozen* know. For example, not only did Frank Gilbreth, Sr. and his wife, Lillian, have a dozen children together; but they were also, both Frank and Lillian, highly successful and influential engineers. The fact that Lillian was so successful in business and so highly educated was a bit unsettling for some in those days. Indeed, upon the occasion of the Gilbreths’ marriage in 1904, the local newspaper thought it necessary to assure the concerned public that, although the new Mrs. Gilbreth had recently graduated from Berkley, she was nevertheless a great beauty.

The Rise of Scientific Management

Society’s concerns notwithstanding, this husband and wife team were part of the rising army of industrial engineers at the turn of the last century, experts in what came to be called “scientific management” and “motion study,” the goal of which was to break manufacturing processes down into their most basic, component procedures and movements, with each part being “so simple that it would not tax the ability of the worker” (Kliebard, 1987, p. 96). After identifying and labeling each motion required of each worker, the engineers would arrange those discrete movements so as to maximize productivity by minimizing waste of effort, energy, resources, and time. The standardization of the minute, component movements would enable workers to drill and practice those regularized motions until the productivity of each individual worker could be brought up to snuff.

Efficiency Begins at Home

As their children make clear, Mr. and Mrs. Gilbreth couldn’t help but apply their engineering know-how to their home life; and perhaps a home with 12 kids needs more scientific management than some others do. The children report that “our house...was a sort of school for scientific management and the elimination of wasted motions” (Gilbreth & Carey, 1984, p. 1). For example, they write that, in order to help things run as efficiently as possible, “Dad took moving pictures of us children washing dishes, so that he could figure out how we could reduce our motions and thus hurry through the task” (Gilbreth & Carey, 1984, p. 2). He also demonstrated to all of his children—in the bathtub, with all of his sons watching, and on the living room floor, fully clothed, with all of his daughters—exactly how to lather and rinse oneself most efficiently so as to eliminate delays in the bathroom. The Gilbreth children indicate both that the kids found their father’s emphasis upon efficiency endearing and that he held himself to perhaps an even higher standard of productivity. For example, the children explain that (A) home or on the job, Dad was always the efficiency expert. He buttoned his vest from the bottom up, instead of from the top down, because the bottom-to-top process took him only three seconds, while the top-to-bottom took seven. He even used two shaving brushes to lather his face, because he found that by so doing he could cut seventeen seconds off his shaving time. For a while he tried shaving with two razors, but he finally gave that up. “I can save forty-four seconds,” he grumbled, “but I wasted two minutes this morning putting this bandage on my throat.” (Gilbreth & Carey, 1984, p. 2)

The children go on to observe that “it wasn’t the slashed throat that really bothered him. It was the two minutes” (Gilbreth & Carey, 1984, p. 2).

Gilbreth’s antipathy toward waste and his skill in the scientific study of motion gained prominence initially in the world of bricklaying, where he became a nationally recognized expert. A mason of astonishing speed himself, he argued that “if one bricklayer is doing the job the right way, then all the others are doing the job the wrong way” (Gilbreth & Carey, 1984, p. 26) and that whoever is in charge should “find out who’s laying brick the right way, and make all the others copy him” (Gilbreth & Carey, 1984, p. 26). His way, of course, was the right way.

The Influence of Frederick Winslow Taylor

Although Frank and Lillian Gilbreth are somewhat well known to us in our day because of *Cheaper by the Dozen*, one of the Gilbreths’ colleagues in the scientific study and management of motion, Frederick Winslow Taylor, was more prominent 100 years ago. Renowned for his ability to apply the principles of scientific management in industry, Taylor, like Gilbreth, reasoned that those principles ought to be applied outside of industry as well. Indeed, in 1912, Taylor testified before Congress that scientific management would lead not only to more productive manufacturing and construction, but also to a more collaborative, less contentious, less suspicious world. Scientific management, he believed, would end all arguments about how and how much laborers ought to work during a given shift; standardization of work would lead to standardization of worth, thus preventing unpleasant disagreements about wages. As a result, labor and management would work together toward common goals, with the worker recognizing that the size of his...
paycheck depended on his dedication, efficiency, and alacrity, and the employer recognizing that the success of his venture depended on both the standardization and the well-being of his laborers. No more strife in the workplace. No more confusion or grumbling about the definition either of an honest day’s work or an honest day’s pay. And the quelling of workplace strife through the principles of scientific management, Taylor (1912) testified, would have ramifications far beyond the factory floor, even globally, including “the substitution of peace for war” (quoted in Taylor, 1947, p. 30).

Taylor was so forceful and influential in promoting the efficacy of scientific management that efficiency became the watchword of industry nationwide, and, just as the Gilbreths had channeled the study of industrial processes into their own kitchen and bathroom, the promises of scientific management began to spill out of the factories and into schools across the country as some professors of education and curriculum theorists began to apply the principles of motion study to teaching and learning. Herbert Kliebard (1987), one of the foremost historians of the curriculum in the United States, notes that, although Taylor did not concern himself directly with the processes of schooling, he exerted enormous influence through certain of his disciples in the world of education.

The School as Factory

One of Taylor’s most ardent and prominent followers was John Franklin Bobbitt, who became head of the Department of Education at the University of Chicago in 1909. In 1912, the same year in which Taylor testified before Congress, Bobbitt published an article entitled “The Elimination of Waste in Education.” There, Bobbitt (1912) referred to schools as “plants” (pp. 259, 260) as though they were factories, and argued that each plant should be operated “according to recently developed principles of scientific management, so as to get a maximum of service from a school plant and teaching staff of minimum size” (p. 260). Fleshing out his factory metaphor, Bobbitt argued that school plants should never idle: the entire building should be used for educational purposes every available hour of the day and year. He called for the extension of the school day into the early evening, of the school week into the weekend, and of the school year well into the summer. He argued also for a streamlined workforce, presenting his fervent hope that teachers of certain specialized subjects (such as music, art, and physical education) could soon be let go, replaced by highly educated instructors who could teach subjects, both English and drawing, both geometry and physical fitness.

For Bobbitt (1912), the elimination of waste in education also meant remediating what he called “retardation” (p. 266) by working with “the laggards” (p. 266) in special weekday, Saturday, and summer study sessions. Students struggling with mathematics, he reasoned, could be withheld from non-essential subjects like music and art and required to do double the work in mathematics until they were brought up to speed. I’ll mention only one other aspect of Bobbitt’s (1912) factory metaphor: his identification of students as “raw material” (p. 269) and his belief that the quality of the raw material ought to dictate the kind and amount of education each student should receive. In his view, young people obviously uninterested in and demonstrably unfit for what he called “abstract intlection” (p. 269) should be removed from academic classes and given more work in “manual activities” (p. 270). Students clearly of the “intellectualistic type” (p. 270), however, should be prepared for the professions by reducing their attention to “concrete activities” (p. 270) and enhancing their focus on academics.

Curricular Standards, Standardization, and Fragmentation

While Bobbitt and others began to apply the principles of scientific management in rather gross ways to the purposes and shape of the curriculum, other devotees of industrial management began to particularize and atomize the educational process, breaking subject matters down into their component parts and arguing strenuously for standardized objectives, procedures, and tests of quality in order to remedy a problem identified by many manufacturers: the nation’s lack of “skilled workmen” (Massachusetts Commission, 1906, p. 4). For example, David Snedden (1921), who shared Bobbitt’s belief that efficiency demanded tailoring the curriculum to students’ obvious, predetermined destinies in society, called for a systematic analysis of education that would produce “a thousand definite educational objectives” (p. 79). In his view, the curriculum should be constructed of the tiniest of measurable units, such as a single spelling word, for example; thus, Snedden was following Bobbitt (1918), who had written that, in accordance with the principles of scientific management, educational objectives ought to be “numerous, definite, and particularized” (p. 42).

Of course, another word for particularized is fragmented, and it is no surprise that, in the wide wake of scientific curricular management, closely related academic disciplines were sundered and all the natural bridges between them reduced to rubble. In my own high school experience, for example, I never noticed the connections that seem so obvious to me now, the deep sympathies between my calculus course (taught in one wing of a large, urban high school) and my advanced physics course (taught in another wing); I was equally ignorant of the fundamental relationships between my courses in American history, on the one hand, and American literature, on the other. Having missed THOSE connections, I had no hope of seeing the connections between music and the sciences, between ancient philosophy and modern education, between athletic prowess and mathematical understanding. I had learned all those subject matters in linear, piece-meal, piece-rate fashion, as if on an assembly line, and had missed the complex, integrated network of knowledge.
Of course, scientific management’s call for a thousand, particularized educational objectives led to fragmentation, not just between disciplines but also within them. For example, in English, my home discipline, the fragmentation of the curriculum and the particularization of objectives has led to a state of affairs in which literature is often taught as though it had nothing to do with composition, in which composition is often taught as though literature were a matter for other minds, and in which language is nearly always taught as though it had nothing to do with either composition or literature.

In Michigan, as in other states, the century-long push for curricular fragmentation birthed a bewilderingly long and specific list of Language Arts standards and benchmarks for early elementary, later elementary, middle school, and high school. The Language Arts standards are presented in categories entitled things like “Meaning and Communication,” “Language,” “Literature,” and “Skills and Processes.” Many fine, caring educators volunteered to help craft the standards, reasoning that, if the state is going to require their creation and enforce their implementation, then teachers had better be involved in the process. In order to satisfy the state, however, the team of educators had to produce a “numerous, definite, and particularized” (Bobbitt, 1918, p. 42) set of standards.

Power Standards

My favorite response to the proliferation of particularized standards in Michigan and nationwide has been the development of so-called “power standards” (see, for example, West Virginia Department of Education). Many state departments of education have touted power standards as the key to designing efficient, productive, standardized instruction. Here’s how power standards work: after the network of knowledge has been broken down into its most linear, fragmented form, you take the long list of particularized standards and decide which of them are really important. Once you have identified the important ones, you try to combine or chunk them to make the list smaller. So, first, in accordance with industrial expectations and motivations, the states require teachers to fragment teaching, learning, and subject matter as much as possible. Then, perhaps energized by the famously failed research agenda of scholars such as Hume, Dumpty, and King (et al.), they set about requiring teachers to try to put the standards back together again. And then, of course, they require testing—lots of it. That is how scientific management works, whether the hoped-for product is a 3-inch bolt or a compliant, 18-year-old worker. In the spirit of Taylorism, the fragmentation and subsequent recombination of subject matter must be followed by repeated, standardized assessment to ensure a standardized product.

A Cautionary Tale

Obviously, the tests are supposed to measure students’ knowledge and intelligence. And I think that the proliferation of standardized testing has indeed allowed many students to display their intelligence, though perhaps not always in the ways that those who promote and, frequently, profit from the tests might imagine. A fourth-grade teacher recently told me the following story about how one of her students responded to the language arts portion of the state mandated, standardized test. After the teacher had distributed the materials and read the instructions to the students, she asked if there were any questions and, hearing none, started the time clock. Five minutes into the 45-minute test, she was shocked to see that one of her students appeared to be done. Very quietly, so as not to disturb the other students, she approached the speedy test-taker and whispered, “James, is there a problem? Your bubble sheet is completely filled in, but it only took you five minutes. How did that happen?”

Looking up at his teacher with a winning smile and employing his best stage whisper, James replied, “I beat Ian!”

Here, thought the teacher, is a student who understands what we have been working so hard to teach him, which is that education is a contest, a race to the top of something. He has learned that the most important goal is to finish quickly, to get all the questions answered quickly, to beat both the clock and one’s classmates. It’s not about knowledge or understanding. It’s about finishing. It’s about competition. At the tender age of 10, he already knows that his performance on this test will influence his life not at all. Smart kid. Too bad. If he is to have any motivation to slow down long enough to learn or to really prove that he has understood important learning. And by law I can’t even explain poor performance to the teacher.

Part of the tragedy here is that the state legislature recently passed a law that will require an administrator who wasn’t in the room on test day (or on the vast majority of the other days of the year) to evaluate James’s teacher based in large measure on the test scores of her students, including students who rush through the test, who don’t even read the items, who see no reason to do their best, and who have learned things that a bubble-sheet test could never measure. After telling me her story, the teacher said, “Go ahead and evaluate me every year. I have no fear of that. But evaluate me based on things I have control over. I can’t make my kids care about the tests, especially when they know they have no personal stake in them. I can’t make sure they’ve all had breakfast or that nobody saw a fight on the way to school. I can’t reshape the test so that it actually asks questions about important learning. And by law I can’t even explain poorly worded questions to students so that they actually know what’s being asked of them.” Her response reminds me of Wilhelm’s (2008) pointed, passionate to some of his colleagues about standardized tests:

..the fragmentation of the curriculum and the particularization of objectives has led to a state of affairs in which literature is often taught as though it had nothing to do with composition, in which composition is often taught as though literature were a matter for other minds, and in which language is nearly always taught as though it had nothing to do with either composition or literature.
Alternatives to Standardized Learning and Assessment

Inquiry and Teacher Research

According to Wilhelm (2008), teaching and assessment based on inquiry are superior to more standardized approaches. Ar­
chibald and Newmann (1988) would agree, for they argue
that authentic educational achievement is marked by deep,
active, disciplined inquiry instead of the passive reception
and “passing familiarity” (p. 3) required and measured by
standardized tests. In their view, authentic learning requires
the integration of knowledge, pulling and putting ideas to­
gether, instead of curricular fragmentation; in addition, they
emphasize that, in order to be truly meaningful and educa­
tive, learning outcomes must have value beyond the class­
room—that is, beyond simply marking the learner as competent
or incompetent.

Engaging students in pur­
poseful, focused, collabora­
tive inquiry is one alterna­
tive to more standardized
approaches to instruction
and assessment. Another is
teacher research.

An Uphill Battle

Archibald and Newmann (1988), Hillocks (1995), Wil­
helm (2008) and many others have convinced me that what
we need are not common assessments, but uncommon assess­
ments.

Speaking Out Against Taylorism Then and Now

Focusing on the Human

Those who spoke out 100 years ago fared no better. Indeed,
Kliebard (1992) reports that, when Taylorism first swept the
country early in the 20th century, there were few voices raised
in opposition. There were, however, a few shining excep­
tions. For example, in 1912, the year in which Taylor testified
before congress and Bobbitt published his article identifying
children as raw material (as if they were so much pig iron
waiting to be processed), Benjamin Gruenberg wrote the following in The American Teacher:

We have yielded to the arrogance of “big businessmen” and have accepted their criteria of efficiency at their own validation, without question. We have consented to measure results of educational efforts in terms of price and product—the terms that prevail in the factory and the department store. But education, since it deals in the first place with human organisms, and in the second place with individualities, is not analogous to a standardizable manufacturing process. Education . . . must measure its efficiency in terms of increased humanism, increased power to do, increased capacity to appreciate.

(p. 90)

Mr. Gruenberg clearly understood that in education, at least, standardization is exactly the wrong way to achieve high standards; human beings are too various and too brilliant to be so predictable.

**Focusing on the Nature of Educational Objectives**

Other, more well-known educators joined Mr. Gruenberg in dissenting from the prevailing movement toward the industrialization of education. Dewey (1922/1964), for example, attacked the notion that so-called “objectives” must be identified and imposed from the outset and from above. Instead, he argued, objectives ought to arise during and from within genuine, authentic, inquisitive, educative pursuits. According to Dewey, one of the most dangerous and, ironically, counterproductive problems with all of the fragmented, supposedly measurable, standardized objectives is that they become end points, stopping places, things to prove that you know and that’s that. For Dewey (1922/1964), a true educational objective is not an end point, not a terminus, but a terminal (p. 70): think of an airport terminal, a place you go to on a journey in order to go somewhere else. He writes,

A port or harbor is [a mariner’s] objective, but only in the sense of reaching it, not of taking possession of it. The harbor stands in his thought as a significant point at which his activity will need re-direction. Activity will not cease when the port is attained, but merely the present direction of the activity. The port is as truly the beginning of another mode of activity as it is the termination of the present one. (pp. 72-73, emphasis in original)

**Focusing on Alienation**

Dewey (1902/1964) believed that, when objectives become standardized end points to be proven instead of turning points to be used in pursuit of authentic learning, students become disengaged and docile because they lose any sense of vital, personal connection to the subject matter. As Kliebard (1992) notes, “In education, as in industry, the standardization of the product also means the standardization of work” (p. 92). He argues that, “as in industry, the price of worship at the altar of [educational] efficiency is the alienation of the worker from his work” (p. 92) and the destruction of “the continuity and wholeness of the enterprise . . . for those who engage in it” (p. 92). As a result, “the sense of delight in intellectual activity is replaced by a sense of urgency. The thrill of the hunt is converted into an efficient kill. The wonder of the journey is superseded by the relentless pursuit of the destination” (p. 92).

All of us who spend time in schools see evidence of the alienating urgency teachers and students labor under. How often have we observed classrooms in which students’ questions about and interests in various topics are brushed aside because “we simply don’t have time?” Apple (1986) refers to the inimical time pressure teachers face as “intensification”; in his view, “intensification represents one of the most tangible ways in which the work privileges of educational workers are eroded” (p. 41). In short, Apple argues that intensification is used to control teachers and to “deskill” them (p. 41)—that is, to remove from them the possibility and power of professional creativity and ownership, leading to further alienation from the “product” of education. Like Kliebard, Apple (1986) blames Tayloristic adherence to minute standards and the application of a factory model for this intensified alienation of labor. He writes, that, although “Taylorism . . . often generated slow-downs and strikes, exacerbated tensions, and created new forms of overt and covert resistance [in the workplace]. . . . its ultimate effect was to legitimate a particular ideology of management and control, both to the public and to employers and workers” (p. 40). Apple argues that Taylorism encouraged “acceptance of a larger body of ideological practices to deskill . . . [teachers] and to . . . intensify their labor” (p. 40). As Smagorinsky (2010) has argued, the stultifying, deskilling sameness imposed upon teachers in the name of quality control drives many excellent teachers from the profession and prevents many excellent candidates from considering teaching. In addition, Smagorinsky (2011) writes:

Good teachers require something more than an environment meant to punish bad ones. Good teachers need to feel valued and respected. They need to have the latitude to exercise good judgment, to be different when they need to, to incorporate new ideas into their teaching, to view their work as a way to grow intellectually and in the process inspire their students toward the same vigorous and invigorating way of approaching life. The straitjackets of minimum-competency national standards and the testing mandates that enforce them may well make such work virtually impossible to imagine or carry out. (http://www.ajc.com/opinion/putting-socrates-and-jesus-830256.html)
Focusing on the Vulnerable

As frustrating as the relentless pressures of standardization are for teachers, they are equally, if not more, injurious to students. According to Dewey (1916/1944), the imposition of discrete, inert, standardized objectives "diminishes . . . the significance of [educational] activity and tends to reduce it to a drudgery from which one would escape if he could" (p. 89). Recent reports of high dropout rates, especially in our urban centers, indicate that many can and are escaping the factory-like schools that seek to hold them accountable for learning at piece rate and to train them to be productive workers in a 21st-century global economy. Over 1.2 million students drop out annually, most choosing to leave the public schools of our major cities which, of course, tend to serve primarily students of color (Thomas, 2008). Kozol (2006) argues that the marriage of business and education, the proliferation of rigid, particularized standards, and the vast, hegemonic testing apparatus brought to bear in the interest of controlling teachers and students has an especially deleterious effect on poor children of color. He writes:

Curriculum materials that are alleged to be aligned with governmentally established goals and standards and particularly suited to what are regarded as "the special needs and learning styles" of low-income urban children have been introduced. Relentless emphasis on raising test scores, rigid policies of non-promotion and non-graduation, a new empiricism and the imposition of unusually detailed lists of named and numbered "outcomes" for each isolated parcel of instruction, an oftentimes fanatical insistence upon uniformity of teachers in their manage ment of time. . . . and a frequent use of terminology that comes out of the world of industry and commerce—these are just a few of the familiar aspects of these new adaptive strategies. Although generically described as "school reform," most of these practices and policies are targeted primarily at poor children of color. (pp. 63-64)

The Importance of Mystery

As "public intellectuals" (Giroux, 1990, p. 382), teachers are responsible to keep speaking on behalf of such vulnerable students and in support of their vital profession, even when those presently in power are determined not to listen. We must also be fair to those, both within our profession and without, who favor standardization. In that spirit, perhaps I should conclude by apologizing to the efficiency engineers of days gone by. I've been pretty hard on them in this article. After all, Lillian Gilbreth, widely acclaimed as the mother of modern management, nevertheless sought to instill in her children a sense of mystery and beauty beyond and sometimes in spite of efficiency. The fact that her first two degrees were in literary studies—her Ph.D was in psychology—might explain why she remained so open to the unmanageable and the unmeasurable, even as she became the first woman member of the American Society of Mechanical Engineers and the first woman professor in Purdue's department of engineering. Her children explain:

[It] was Mother who spun the stories that made the things we studied really unforgettable. If Dad saw motion study and teamwork in an anthill, Mother saw a highly complex civilization governed, perhaps, by a fat old queen who had a thousand . . . slaves bring her breakfast in bed mornings. If Dad stopped to explain the construction of a bridge, she would find the workman in his blue jeans, eating his lunch high on the top of the span. It was she who made us feel the breathless height of the structure and the relative puniness of the humans who had built it. Or if Dad pointed out a tree that had been bent and gnarled, it was Mother who made us sense how the wind, eating against the tree in the endless passing of time, had made its own relentless mark. (Gilbreth & Carey, 1984, p. 22, emphasis added)

We could do with at least a bit of Lillian Gilbreth's openness to mystery and her determination to introduce her children, not just to the outward systems and efficiencies of things, but also to the inward and the inexplicable. As Lewis Hyde (2007) has argued, "the passage into mystery always refreshes. If, when we work, we can look once a day upon the face then our labor satisfies. We are lightened when our gifts rise from pools we cannot fathom" (p. 25). Hyde points us toward that which is profoundly unpredictable, absolutely unstandardizable, and utterly essential—and it sounds as if Lillian Gilbreth might have pointed, at least at times, in the same direction.

Similarly, although Frank Gilbreth, Sr. seems to have eschewed the unfathomable in favor of standardizable certainty and efficiency, his example is not entirely negative. In fact, there is one way in which we would all be better off if we were to follow his lead. Like Frank, we ought to consider whose throats we are cutting in the name of efficiency and standardization. If we were to look up long enough from our razor sharp lists of particularized standards and our cut-throat test scores, we might recognize our own faces staring back at us in the mirror, the faces of our neighbors and their children, the faces of our most needy and vulnerable citizens. And perhaps, like Frank, we would immediately opt for a less efficient, less destructive approach.

References


Brian White is a Professor of English at Grand Valley State University in Allendale, MI. He is especially interested in improving teacher education, especially in the language arts, and enhancing response to literature.