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American Education in 2030

Classroom Teaching in 2030

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In *Rip van Winkle* the title character awakes after a twenty-year nap to find his village much altered. The cliché in American education is that, had Rip awakened in a classroom twenty years later, he would have noticed no changes at all. It's true enough that classroom practice has changed little since 2010, at least as it meets the casual eye. Classrooms are still organized with rows of desks facing the same direction. The teacher stands before the students and does most of the talking.

But student scores on the National Assessment of Educational Progress (NAEP) have shown substantial increases in core subject areas. *Something* must have happened in classrooms during the past twenty years. Computer-aided instruction deserves some of the credit. Computers offer engaging, interactive methods of learning, and each student can work at his or her own pace. But students still spend only about an hour each day (on average) working in computer laboratories.

Here I argue that students have learned more because four obstacles that teachers faced twenty years ago have been removed. Those obstacles made the teacher's job needlessly difficult.

Teaching and the Limitations of the Teacher's Mind

One need not be a brain scientist to observe that everyone has mental limitations. Some people have limited attention, and their performance suffers if they try to do too many things at once. Some people make mistakes when they are interrupted. Others perform complex tasks poorly when they first try them but improve with practice.

These less-than-startling observations about the human mind were ignored when it came to teachers. Before 2010 the teacher's job was configured in a way that did not respect normal mental limitations. Teachers were called on to perform four tasks that were beyond the capacity of most anyone to perform as expected. I refer to those as *mental obstacles.*

Mental obstacle #1: Teachers (or sometimes administrators) were expected to write coherent curricula—that is, to select which material students should be expected to learn for a given grade and to sequence it sensibly. Selecting the most important concepts in a field and putting them in an order that will make sense to students requires deep knowledge of a discipline—knowledge that most teachers or administrators simply did not have. In the absence of such knowledge, teachers could (and did) write curricula, but many of them were likely less than optimal. This problem was all the more challenging for elementary teachers, who were expected to provide foundational knowledge on which later teachers could build and to do so for multiple subjects.

Mental obstacle #2: Teachers were expected to write their own lesson plans—that is, to plan the activities that fill each school day and will (presumably) fulfill the goals laid out by the curriculum. In 2010, first-year teachers did not graduate from schools of education armed with ready-to-go lesson plans; at that time about 80 percent of teachers reported writing more than 90 percent of their lesson plans. Writing lesson plans, like writing a curriculum, also requires vast knowledge but of a different sort. Writing a curriculum requires knowing what children need to learn next. Writing lesson plans requires knowing what children know *now* and the techniques that will get them from their current level of knowledge to the next one. Researchers differentiate between content knowledge (knowing mathematics) and pedagogical content knowledge (knowing how to teach mathematics).

Mental obstacle #3: Teachers were expected to cope with enormous diversity of student preparation. Some students were far behind, and others were far ahead. By the time those students reached junior high school they were often disruptive—out of boredom if ahead or frustration if behind. Teachers had few disciplinary methods available; because most taught more than a hundred students during a day, they could not get to know any of them well. The result was often a cycle in which the student would act out, the teacher would plead with or threaten the student, the student would quiet down for a few minutes, there would be another outburst, the teacher would reprimand the student, and so on. This sad game represents a cost to the teacher in terms of attention. The teacher often had to monitor disruptive students nearly continuously; some teachers reported that two or three students soaked up 75 percent of their attention, meaning that others in the class were inevitably shortchanged.

Mental obstacle #4: Teachers were expected to improve their craft without any opportunity to practice. One damaging misunderstanding was the confusion of "experience" with "practice." These are not the same thing. For example, my driving improved substantially during my first six months behind the wheel because I practiced driving. But during the subsequent thirty years I haven't improved much, although I've gained experience. Practice differs from experience: when we practice, we actively try to improve. We note what we are doing wrong and seek alternate ways of doing things. Practice also requires expert feedback; it's hard to spot what your own mistakes. A teacher may recognize that students are bored, but she may not always see why. In 2010, no procedures were in place to make practice part of a teacher's job. Teachers worked in isolation and so could not provide feedback to one another.

Teachers were expected to have extraordinarily vast knowledge of their subject matter, to have limitless attention when teaching, and to learn from experience in ways that other humans do not. Needless to say, they did not do these things. They completed all of the tasks set for them, after a fashion. The term *mental obstacle* emphasizes that teachers found ways around these problems. They did create curricula, write lesson plans, and so forth. But that does not mean that the products of that work were the best they could be for students.

How Teaching Was Made Easier

In the past twenty years three of these four mental obstacles have largely been removed, although not through planning or design. The initial impetus came in 2010, with the creation of a set of national standards that described what students should learn during each grade but did not specify the materials that should be used or how they should be sequenced, as a curriculum would. From its inception this initiative had the cooperation of nearly all of the states, and the standards that emerged were widely viewed as superior to almost any state standards then in place. Good standards, however, are probably necessary but not sufficient for good schooling. Before 2010, when each state had different standards, there was no correlation between the quality of standards in a state and the achievement of its students.

It seemed only natural that a national test should accompany the standards to assess whether states, districts, and individual schools were meeting the standards. The success of the standards project did much to quell opposition to the test, and educators were, in any event, accustomed to state testing; national testing simply took its place. The story might have ended there had the test been poor. Teachers and administrators would have been frustrated and resistant, and the whole effort would have petered out. Fortunately, the Department of Education wisely used the structure of NAEP as a model for creating, scoring, and scaling the test. (The NAEP had long been viewed as a model of political neutrality and educational quality.) The results were as follows:

Teachers no longer write a curriculum: Much as it had done in the mid-1990s in Massachusetts, the test forced teachers and administrators to take the standards seriously. Everyone was eager to teach to the test, but because the standards were rigorous and deep and because the test was sound, there was no way to game the system. The only way that students could score well (and thereby make a district or school look good) was by learning the required content and skills.

That situation made administrators (and, to a lesser extent, teachers) open to mandating a set curriculum that all teachers in a school or district would use. If a curriculum made it more likely that students would score well on the test, administrators were ready to sign up. Some states went as far as developing state-mandated curricula, aligned to the standards. Other states recommended that districts adopt a curriculum from a short menu of approved choices, some generated by textbook publishing companies, others created in districts that had motivated and talented teachers. Some states left districts to their own devices, but, once it became plain that a set curriculum closely linked to national standards helped students do well on the national test, most districts were eager to adopt one. Thus, the first mental obstacle for teachers and administrators—writing a curriculum—was removed. Most students learned from a content-rich and sensibly sequenced curriculum, regardless of the teacher to whom they happened to be assigned.

Teachers share lesson plans: With a set curriculum in place, teachers within a school, across the state, or even across the country knew they were teaching the same material. Thus, for the first time, trading lesson plans became logical. By 2015 most young teachers had grown accustomed to sharing intellectual property, as observed in wikis, open-source software, and shared artistic products. Nonprofit internet portals were created where teachers could upload and download lesson plans, organized by grade and subject and tagged with relevant terms from curricula. These databases were local affairs, sometimes sponsored by a district or a collection of districts but more often organized by a technology-savvy teacher.

Classroom-ready lesson plans offered teachers tremendous advantages. The boon to beginners is obvious; they no longer had to write 180 days' worth of plans from scratch. But even older teachers could benefit from other teachers' experience. Teachers could know *before* they tried a lesson those parts students were likely to find confusing and how to address the difficulty.

Many early lesson plan databases were not moderated, relying on teacher-rating systems for quality control, but these soon became clogged with low-quality lesson plans. The successful databases used both ratings and expert gatekeepers to ensure quality. Textbook publishers and smaller dedicated companies sold packages of lesson plans that included elaborate supplementary materials and online support for teachers.

Inevitably, the lesson plan databases were consolidated. Teachers wanted to upload their lesson plans where they would be seen by many other teachers; teachers interested in downloading lesson plans naturally went where the selection was largest. That consolidation made it easy to research lesson plan effectiveness, which, not surprisingly, showed that some lesson plans were more effective than others.

Those findings prompted questions about teacher practice. Was it fair to children to allow a novice teacher to "exercise her creativity" in lesson planning when she could use lesson plans proven to, for example, reliably teach decoding to most children? This reasoning pitted autonomy—a cherished value among teachers—against student learning.

Even the mighty teachers' unions could not find a reasonable way around such logic. Requiring that teachers use effective lesson plans seemed inevitable. But the unions did get something in return for surrendering teacher autonomy: they insisted that this requirement apply only to novice teachers and that the gatekeepers (that is, those who selected the lesson plans that novices should use) be the more senior teachers. As it turned out, restricting the policy to younger teachers has made little difference; once teachers had used the same lesson plans successfully for five years, they were motivated to continue using them. Thus, the second mental obstacle for teachers—preparing lesson plans—was removed.

Chronically disruptive students exited the classroom: The second part of the unions' bargain eventually removed the third mental obstacle, although that was not its intent. Teachers argued that the mandated lesson plans meant less flexibility for teachers and thus made classroom management more difficult. Something had to be done about chronically disruptive students. Union officials suggested that such students (identified by the principal) should be taught in separate classrooms with low student-teacher ratios that made heavy use of computerized instruction. Students were able to work at their own pace, which was crucial because most disruptive students are either far ahead or far behind the rest of the class. Those who were ahead of the class were no longer bored; those behind the class were no longer confused and publicly shamed.

A new specialty within the teaching profession was created to teach in those classrooms. Those teachers concentrated on methods of motivating students and keeping them on task. They had the advantage of getting to know each student well because of the small class size and because students remained in the same classroom throughout the day.

This program, first adopted in New York State, was an immediate success. Students selected for those classes learned much more than they had in mixed classes. Teachers of regular classes reported that the classroom atmosphere improved with removal of the disruptive students.

Teachers begin to collaborate. . . almost: Teachers' unions strongly supported the program because they saw it as a way to increase the demand for teachers. It did so, but it also led lawmakers in some states to contemplate increases in class size. When first implemented, class size averaged nineteen students, but if the disruptive students had been removed, couldn't a teacher handle twenty-four students? or even thirty? Legislation that was initially designed to save money by reducing the number of teachers was sidetracked by successful union lobbying. Class size increased by 20 percent, but the number of hired teachers also *increased* slightly because the teachers' unions successfully argued that increased class size would require more careful planning on the part of teachers and that teachers should therefore have a planning period each day.

This planning period *could* be the means by which to remove the teacher's fourth mental obstacle by being a time during which teachers observe and critique one another and collaborate on lesson planning. That has developed in some schools but remains the exception. Most schools do not have a culture that supports collaboration, and teachers work largely on their own.

Conclusion

Although the changes of the last twenty years have been described as the removal of mental obstacles for the teacher, it should be borne in mind that the changes have had important consequences for students: classrooms that are less chaotic and instruction that follows a sensible, structured sequence within and across years, delivered via methods that have been tried and shown to work.

Those changes have not made U.S. educators the prophets of a new education. Rather, they have brought American educators closer to the methods long in use by those countries whose students routinely score at the top of international comparisons. A strong national curriculum, implemented through carefully prepared and vetted lesson plans, has been the norm in these countries for a generation or more. The irony is that American educators did not mindfully imitate these proven methods but rather adopted them through a series of accidents.

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