

Re-Thinking the Goals of Public Education

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<<I wrote this way back in 2009, when the budget battles over school funding in California were raging (not that such battles ever subside, I suppose), and long before the ideas of PragManagement had coalesced. Nevertheless, the parallels are close enough—e.g. a focus on actual, 'situated' practice, and the idea that 'learning' can be considered synonymous with 'doing'—that I decided to post it here as well. At the time, I'd recently discovered the work of social anthropologist Jean Lave on 'situated learning'—work I found then, and still today, to be profoundly inspirational, and of course applicable for learning in the context of managing and leading.>>

Introduction

What if the primary goal of public education was not the memorization of facts or figures, nor even high grades or test scores? What if, instead, the primary goal was producing students who demonstrate the ability to successfully accomplish meaningful tasks, i.e. the ability to get things done? What if our top students, in other words, were judged to be so, not because of what they 'knew,' but because of what they had shown they could 'do'?

This is a proposal for improving our public education system. We will write some things here that are critical of the system as it currently exists, not for the sake of being critical, but for the purpose of helping. We'll also write some things that go against conventional wisdom, not to be sensationalist, but because we believe the potential of our students is far greater than conventionally (and currently) assumed. We also believe the improvement opportunities for public education, therefore, are far greater than simply making progress on the issues that currently dominate the headlines—i.e. funding, test scores, accountability, vouchers and parental involvement.

As important as these issues are, recent debate over public education has overlooked some of the more fundamental questions, including, for example, what it means to be 'educated,' and what we want the purpose or primary goal of our public education system to be in the first place. The answers to these kinds of questions are not written in stone. They shouldn't be forced on us by experts touting complex reports which they claim are politically or methodologically neutral or spin-free (an impossibility), nor should they be imported wholesale from state or federal guidelines. The answers to these kinds of questions are what we the people of the local community decide they will be. This article, then, will look at the purpose of mainstream public education as it is today, and make a proposal for how it could be changed, and improved. More specifically, we will propose that the primary purpose of our public education system should not be to produce graduates who 'know,' as measured by standardized test scores and grades, but

to produce graduates who can 'do,' as demonstrated by the successful completion of work that is meaningful for them, and our community. This proposal is new, but it's inspired and informed, ironically enough, by proven ideas from the past

Back to the future of public education?

This idea—of making the goal of education to be the successful performing of meaningful work—is certainly not new. In fact, it's a guiding principle of the centuries-old system of apprenticeship and the more recent 'vocational' or 'career and technical' education. These traditional forms of education—let's call them, for convenience, 'vocational education'—focus on 'hands-on' activities during education, that closely match the activities and performances that students will be asked to perform after their education. Not surprisingly, vocational education is considered by many (including education specialists) to be among, if not the most effective form of learning and education ever devised. Nevertheless, with the exception of some good programs at the high school level, vocational education remains a minor component of—and very different from—mainstream public education, in terms of purpose and the notion of what it means to learn or to be educated.

The means and ends of mainstream public education

For mainstream public education, learning is the process of acquiring facts and figures, information, knowledge and skills, through some kind of transfer, from book to reader, or teacher to student, in preparation to perform some practical task. Learning involves reading, writing, experimenting, observing or discussing, mostly within a classroom. The goal of learning (and the purpose of education, more broadly) is to produce students who 'know' or who are 'knowledgeable.' To be 'educated' or 'intelligent' means to have a significant amount of knowledge in some area, as demonstrated by scoring high on standardized tests. Students who have been successfully educated are said to be prepared to, or at least have the ability to later apply the knowledge they've learned, in order to successfully perform work in their chosen vocation.

This all sounds reasonable enough. In fact, these views on knowledge, learning and what it means to be educated or intelligent are so ingrained, so taken for granted, that we hardly ever even consider them. They're treated as given, just as they are in the current debate over public education. And because they're taken for granted, it's not immediately obvious what an alternative approach might be, nor that we even need one in the first place. But as with any approach, there are limitations, and alternatives. Next, we take a closer look at some of the limitations of the current mainstream approach, and show how a proven alternative—vocational education—can help.

From possession to performing

The mainstream view of public education is primarily about possession. Knowledge, information, and even 'skills' and 'abilities' are considered to be 'things' that can be possessed. Learning, therefore, is focused on acquiring knowledge. Students take exams to measure the amount of knowledge or skill they have, to confirm that they 'know,' and determine how intelligent they are.

But does this way of assessing our students really capture all that we want it to? What about those students I'm sure we've all known, the ones at the top of their class, very intelligent—so intelligent, in fact, that they can't tie their own shoelaces, or sink a basket, or remember to bring their lunch money? Or what about the talented football player, whose dedication and friendly manner are an inspiration to his peers on and off the field, but who struggles in the classroom to maintain passing grades? Should his talents be somehow discounted? The current way of assessing students isn't necessarily wrong, it just leaves a lot unexplained. It also overvalues some areas, while undervaluing others.

What's missing here, what goes unexplained and unaccounted for when we consider intelligence to be only a matter of how much knowledge a student possesses, is the value of performing—not the 'ability to perform' at some later time, but rather the actual, demonstrated 'performing' itself, the doing of something useful and meaningful. Unless we also consider performing, we can't fully account for all the value the football player clearly brings—for himself, his family, his team and his school. We also can't account for the value that our 'top' student brings, not when scoring high on a test, but when they're explaining to us, clearly and in a way that holds our interest, the political and economic significance of historical events that most of us can't even remember—exactly the kind of performing, by the way, that our very best teachers demonstrate.

A different notion of 'intelligence'

This brings us, then, to a very different notion of 'intelligence,' one concerned primarily with what students can do, rather than what they know. From this alternative perspective, being intelligent means we can perform a task well. It means our 'top' student is highly intelligent at explaining important historical events (and also at test taking), and that our football player is highly intelligent at playing football (but maybe not test taking). Both students are intelligent, they're just intelligent at doing different things, different performances. Here, learning is not the acquiring of knowledge to use at some later time, but rather the doing, the practicing, or the rehearsing of tasks that are practical and meaningful, in a somewhat protected environment. Assessment is not about 'how much knowledge you have,' but 'how well you perform.' These ideas constitute the essence of vocational education.

One might say, however, that mainstream public education does value performing—academic performance, specifically. True enough, and this observation leads to a couple of important points. First, we see that a focus on 'performing' is not so foreign to mainstream public education after all. The second point is actually a question: What do we really mean by 'academic performance,' anyway? What is the actual, specific, observable performance involved? It's not 'high grades,' because they're a result of performing. Is it 'persevering to accomplish an important goal'? That's indeed a great one, one that parents and teachers try to instill, and that college recruiters and employers look for as well. Unfortunately, persevering is a more general performance, only partially related to academics. There may be others, but the only specific, observable academic performing that I can think of is this: test taking. With no other information available, what can we say about a student who's scored high on a standardized test? Only that he or she, on that day, in that subject, was good at test taking. Whether or not that student is or will be good at tying their shoelaces, making friends, or running a business—those are different questions, about different performances.

You could argue, however, that high test scores are an indicator of perseverance and talent. But perseverance or talent to do what? Because without some other explicit goal or purpose, we're right back where we started—perseverance and talent at test taking. The response to this, then, might be: 'academic performance is an indicator of qualities, like perseverance and talent, that can be transferred to other, more practical tasks.' Makes sense, but then, why not just avoid the tricky 'transfer' bit all together, and give students practical tasks in the first place? If we can't assess 'perseverance' and other desirable qualities directly, and have to settle for an indirect indicator of these qualities, then why not let them be indicated during the performing of practical, useful tasks? Let the qualities of perseverance be indicated while, for example, actually setting up a simple internet business, rather than passing a test on the setting up of an internet business. And since talent, compared to perseverance, can be observed more directly, let's take advantage of that, and provide more opportunities for students to demonstrate their talents directly, just as we do with sports, vocational and extracurricular activities. Which leads to one last point: if these 'extracurricular' and vocational activities are fun, effective, motivating, practical and indicative of the talent, perseverance and other qualities we hope to nurture—then why are they 'extra'-curricular activities? Why aren't they simply 'curricular'? To what are they playing second fiddle? The factoring of polynomials?

In 1992, Geoffrey Saxe, an anthropologist, published the results of a now well-known study focused on Brazilian children selling fruits and vegetables in an open-air market. Amidst the noise and bustle of the market, the children's math calculations while weighing fruit, taking money, making change, etc., were 96% accurate. But when those same children were brought into the classroom, and given math problems of similar difficulty, their scores fell to just 60%. Why would this be the case? We could conclude, as this and numerous other studies have concluded, that our abilities are not easily transferable from one situation to another, but are strongly affected by the situation itself. This one conclusion alone is enough to cast serious doubt on the bedrock assumption of mainstream public education: that knowledge learned inside the classroom, is readily transferable to practical tasks outside the classroom. But there's another, more interesting conclusion that Saxe draws out.

Rather than concluding 'knowledge is not easily transferred,' we could also conclude 'the children are engaged in two very different performances, one which they're good at, and one which they're not. One performance is 'selling vegetables, in a market, while making some use of arithmetic.' The other is 'taking a test, in a classroom, while making some use of arithmetic.' Consider this: if we assess them according to the knowledge they *have*, then we get conflicting results: 96% vs. 60%. If, on the other hand, we assess them on what they are able to *do*, there is no conflict: they're good at (i.e. intelligent at) selling vegetables in a market, and not so good at taking math tests in classrooms. By looking at these as two very different performances, the different results make sense. In contrast, if we impose a singular (and outdated) notion of 'knowledge' and 'intelligence' then we can't explain the different results. This force fitting does get us to a single measure, but the assumption that this single measure can then be used to predict performance in different situations, is bogus. If you were a farmer, and recruited part-timers from among the 'top' students in the math class to help you on market day, you might be in for an unpleasant surprise. And then again, you might not, which is precisely the reason for involving our students in practical, vocationally

oriented activities to help them find and develop what they're interested in, and what they're good at doing.

Importantly, all of this does not mean that the knowledge we have is any less valuable, or that we need no classroom instruction. It does mean, however, that performing, and not possession, comes first. In fancier words, we're talking about the primacy of purpose and performing, over possession. In simpler words, we're talking about vocational education. As Saras Sarasvathy at the University of Virginia, points out, the goal of the Wright brothers was 'flying.' Not even 'to fly,' but simply 'flying.' The Wright brothers put performing first, and worked backwards, using whatever knowledge, information, technology or gut feel moved them closer to their goal. They were pragmatic. Others, in contrast, worked in the opposite direction, assuming, just as mainstream public education does, that knowledge and theories could be somehow transferred or applied to produce successful flight. We 'know' who won that race.

Houston, we have a problem

Because mainstream education is primarily about 'possession,' and not about 'performing,' there arises a need to transfer all the knowledge, skills and abilities we possess, first from teachers to students, and then from students to the task at hand. But as decades of experience and research have shown us, and despite it being a mainstay of public education, it turns out that the notion of 'knowledge transfer' is neither straightforward, nor particularly effective. Of the many issues, we'll look at just two: complexity and the uniqueness of personal knowledge.

The complexity of 'simple' tasks

To accomplish even the simplest of tasks, like riding a bicycle, for example, we rely, consciously or otherwise, on thousands of bits of information, knowledge, memory, experience, intuition, gut feel, real-time sensory input, etc. The sheer amount of information is well beyond what we could ever hope to formally learn in a classroom. 'Of course we don't learn to ride a bike that way,' you might say, 'we have to just get on one and learn to ride it.' We completely agree, and this is precisely the focus of vocational education—not learning about how to do things, but actually doing them.

In 1996, Julian Orr, another anthropologist, published the results of his study of photocopier repair technicians. For several months, Orr followed along with a number of technicians as they went about their work. His research demonstrated, among other things, the utter impossibility of ever having training programs or instruction manuals that can handle anywhere near all the innumerable situations, contingencies and unexpected events that continuously arise in the normal course of day-to-day work. And this was for a job—copier repair technician—that we might not otherwise think of as being particularly complex. For repairing photocopiers, just as with riding bicycles and flying airplanes, learning means doing.

But for riding the bicycle, you might say, we did use information that we learned (i.e. information that was transferred) from our parents, in order to ride sooner, more successfully, and with fewer bumps and

bruises. True enough. The problem here, however, is that the information that each rider finds to be useful, is different. Which brings us to a second major difficulty with the idea of knowledge transfer—the uniqueness of personal knowledge.

The uniqueness of personal knowledge

As numerous studies have shown, when we look into the information that people use to successfully perform tasks, we find that it varies widely by person. For even simple tasks, then, it's very difficult to anticipate what kind of information will be useful for each student, or to standardize a common set of rules that are applicable for every student (or even most students), or every situation (or even most situations). And the more complex the task, and the better we are doing it, the more pronounced the variation becomes. Ask five experts from any field how they do what they do. If they can explain it at all, which they often can't, you'll find they draw from a vast and unique array of information, experience, and personal quirks that are impossible to standardize, let alone teach.

From knowledge transfer to knowledge creation

So if the knowledge required to do even simple tasks is vast, unique and mostly non-transferable, then what can we say about a method of education that relies primarily on the transfer of standardized knowledge? How confident are we that the application of abstract learnings will enable students to accomplish concrete, practical tasks? Here's a tougher question, along the same lines: if children don't directly make good use of parent's advice on bike riding, in order to accomplish the very same task—bike riding, then, what is the likelihood that students will make good use of teachers' advice on factoring polynomials, in order to accomplish quite different, practical tasks? The likelihood, I believe, is low. But there's a counterpoint. If the knowledge required for successfully doing even simple tasks is beyond our ability to standardize and teach, then how can we account for that fact that every day, all over the world, photocopiers are being successfully repaired, and children are learning, successfully, to ride their bicycles?

The answer to this question—or at least, one alternative way of thinking about it that helps a whole lot of things fall into place—is this: the knowledge that successful bike riders, talented football players, and 'top' students are drawing on during their successful performances, is not knowledge that has been somehow transferred into them. Instead, it is knowledge that they have created, for themselves, through experience. Perhaps 'knowledge transfer' vs. 'knowledge creation' seems to be a subtle distinction, but the implications are far from trivial, and this seemingly small difference is the basis for an altogether different approach to public education—a vocational approach.

With a vocational approach, rather than attempting to transfer to children all they need to know in order to ride a bicycle, they create their own knowledge, in the process of riding (and also falling off of) the bicycle. They might use or adopt some of the information or advice from parents, and in so doing, create their own knowledge—the advice or information from parents thus becomes their own. The inefficiency of transferring thousands of pieces of information, only a few of which will turn out to be useful for the rider, are thus avoided. Thousands of pieces may still be necessary, but fortunately, our brains and bodies are more than up to the task of self-creating the knowledge we need to get 'er done, for both simple and fantastically complex jobs.

From this alternative perspective, students create the knowledge that's meaningful for them, according to their own motivations, interests, and unique ways of understanding. Learning is not the acquiring of knowledge, but rather the performing of meaningful, practical tasks. Self-created knowledge and experience are byproducts of learning. To be educated means we can and do perform. To be highly educated or intelligent means we perform very well. The goal of ongoing education is not to transfer more and more knowledge, or to do so sooner, but to enable higher levels of performing on tasks that are more complex and more personally and societally meaningful.

With our current approach, students are presented with a mass of standardized material, with the hope that some of it will 'stick.' But because the material is often abstract and disconnected from a clear, practical purpose, only a very small portion of it will. Standardized materials are often basic, rudimentary, watered-down, lowest-common-denominator materials, that even if they could be 'digested,' would prepare our students for performances of mediocrity, not greatness. Standardized materials have had all the sharp, interesting and politically incorrect corners rounded off of them. Our very best teachers are the best in spite of standardized materials, and in spite of state- and federally-imposed guidelines. Our best teachers are the best because their unique talents, passion and dedication can make even standardized materials interesting and engaging for a fidgety, increasingly large, and increasingly diverse classroom full of fifth graders. Bravo.

Being careful what we wish for

What kinds of performances, then, do we want the graduates of our public education system to be good at doing—both during and after their education? Compared to operational questions of whether or not our tax money is being efficiently spent, these questions of purpose are even more difficult. But when we focus more on practical tasks, parents and other non-specialists in education can more fully contribute. Of course child psychologists, curriculum design and other specialists are needed, but so are the life experiences of parents, especially as the curriculum becomes more practical.

And we should be careful what we wish for, because we see what happens when we put goals in front of young, engaged students: they achieve them. When the goal is acquiring knowledge, it's amazing to me at least, just how much our students come to 'know,' and just how few are the opportunities for them to 'do.' When the goal of education is acquiring knowledge, improvement means getting students to know more, and sooner, rather than experimenting with different approaches, including vocational. High school students, and even some gifted middle school students, for example, now take calculus—a subject most of us didn't have until college—if then.

Rather than having even younger students doing calculus, here are a few suggestions for some different performances we might focus on instead: public speaking—to the city council, for example; organizing public or charitable events; communicating cross-culturally—by organizing exchanges with our sister cities; publishing—by starting a newsletter, website or internet radio station; starting up a simple (or not so simple) internet business; growing a cash crop. Why not expand 'going to work with parents' day, (and, in the process, remind the finger-wagging liability insurers that they work for us).

Show me the money!

Of course, then comes the question, even if a majority were to be in favor of more vocational education, where would the money come from? I'm no finance expert, but I do know that the cost of education (or anything else) is not fixed. I also know that when you pursue new and different ventures, you don't simply adopt the current cost structure as the basis for estimating what the new venture may cost. I mention this because, judging from the debate on education budgets, this is precisely what we're doing. If, for example, the budget for last year was \$100, and we had 10 students, this does not mean that the cost of educating a student is \$10. It simply means that \$10 is *the amount we spent* per student, last year. This year, if tax revenues fall, and the education budget falls to \$90, this does not mean that we automatically have a deficit 'because the cost of education now exceeds the available budget.' Rather, it simply means we now have \$9 per student, instead of \$10. Neither should it mean that if we wanted to experiment with vocational education, that the baseline, initial cost would be \$10 per student. This would assume that the cost of education is fixed, which it isn't. Budget estimates for this or any other alternative approach, should be done from scratch, and from the bottom up.

There is one important factor, however, that makes this difficult, a factor that is rarely if ever mentioned: the inability of large organizations, public or private, to re-think their purpose or embrace initiatives that are truly new and different.

Doing different things: the Achilles heel of large organizations—public or private

We're all familiar with the 'increasingly painful' rounds of cuts that are forced by budget reduction. First we ask the efficiency question: How can we provide the same services, for less money? If we're still over budget, then we begin to ask the service level question: Which services should be cut? This is more or less where we're at now with the current debate over education funding, and it would be easy to assume, which we assume all the time, that we've 'bottomed out,' and that all we have to look forward to are more cuts.

But have we really 'bottomed out'? Are the only options available to us 'what to cut' and 'how deep'? The answer is 'yes,' if the following are also true: 1) that we're unwilling to re-consider the purpose of public education and how it is that we go about delivering on that purpose, and 2) that we're unwilling to recognize that costs of education are not fixed but are simply the result of the educational activities we've chosen to perform, and the assets we've chosen to employ. In fact, the word 'cut' only makes sense if we assume the basic purpose of education and the way we deliver it, are off the table for discussion. If the basic purpose and methods of education were on the table, then the topic of debate would not be 'what to cut?' but rather 'what to change?' If the purpose of public education were up for review, the discussion would not be about 'how to do things differently,' as it is now, it would be 'how to do altogether different things.' And the latter of these is precisely what the current debate on the funding of public education is *not* about.

As we go through successively difficult rounds of cuts, from the efficiency round, and on to the service level round, what we're bumping into is the limit of the system to deliver what we've asking of it, with the budget we've allocated to it—this is the part we hear all the time. What we're also bumping into, however—and this is part we never hear about—is this: the inability for the public education system to

re-think its purpose, to embrace new and different approaches that can operate within the available budget, and the inadequacy of non-monetary public involvement and support. Given the seemingly never-ending crisis of the education budget, it seems high time to entertain the notion of doing altogether different things with our public education system. An increase in vocational education is but one among many possible options.

The final thing to say here, in defense of and respect for the dedicated people within the public education system, is that it is the nature of any large organization—public or private—to resist change. And not because the people there are stubborn or incompetent, but simply because organizations are built to not change. It's no surprise, for example, that more than 70% of organizational change/improvement efforts do not meet their objectives. Nevertheless, I think we have no choice but to try.

Conclusion

Of course vocational education doesn't have all the answers, nor is this a call to replace one approach with another—it is, after all, a proposal. And what we're proposing is simply this: that over time, the way we do things—public education included—tends to become taken for granted, and that we should look at, fundamentally, what we're doing and why. Crises, if they're bad enough, can force us to ask these fundamental and difficult questions, but I don't think we're asking them, not yet, at least, of our public education system. To not ask them now, I believe, would be to miss a great opportunity. Here are just a few.

When our primary school students come to us for help on factoring polynomials or some other abstract concept, and we wonder to ourselves, 'when will they ever use this?'—these are the kind of questions we should ask seriously, and out loud. We should not assume that 'some education specialist somewhere knows better,' because they don't. Why is it that 54% of the state budget (in the case of California, for example) isn't enough for education? And why is it that this response—'yes, but we still spend less per student than other states'—is considered acceptable? It's not acceptable, because it doesn't address the question, which remains unanswered. Many high school districts do offer vocational classes, but why wait until high school, and why not make them part of the core curriculum? If the core curriculum is 'full,' let's revisit how we might teach math, for example, in a more applied way (and assail the currently unassailable state university system and its requirements); let's re-evaluate what is 'curricular' and 'extra-curricular.' How would we respond to criticism that the vocationally-oriented programs already underway at community colleges are nothing more than taxpayer-funded training programs for city, county and state jobs? If some districts are really serious about 'parental involvement,' what can the parents and the school boards do to make it more than a nice-sounding phrase?

The questions are endless, but the window of opportunity, brought on by the current crisis, is not. If now isn't the time to reconsider the purpose and methods of public education, then when?
