

# Letter to Ashley on a New Education

July 21, 2016

Hi Ashley,

Want a nice surprise to hear from you. I'm glad you're settled in your new home in time to meet the kids and get prepared for teaching. The state-of-the-art science building at your new high school should be fun to work in. Maybe I'll get to see it sometime.

As an evolutionary behavioral biologist, you can appreciate that nature vs. nurture is a false dichotomy, because everything biological is a perpetual, inextricable blend of these things; which is why, as you say, "it's incredibly difficult to tease apart the nature vs. nurture influences on anything, especially learning." I think it's good to remember that the mind has a body and couldn't do anything without it. Schools tend to forget that we are biological beings and consequently that our physical experiences are necessary components of our knowledge and ideas. (I wrote a short piece about this, "Experience and Analog," with examples from science, if you're interested. It's online at [tinkering.exploratorium.edu/paul-tatter](http://tinkering.exploratorium.edu/paul-tatter)).

I'm inclined to think that mind and consciousness are not things that the brain does on its own; they are not simply neural functions, and because of this they are not exclusively internal, private or radically individual as our educational psychologies might lead us to believe. Rather, mind and consciousness are manifestations of the give and take transactions or interplay among our biological selves, which of course includes our brains and hands and ears, etc., and other people and their activities (including communicating facial and bodily expressions, vocalizations, gestures, mime, signs, language, art, music, things we make, et cetera), and the objects that constitute our environments at any time. All of these and the changes occurring among them are necessary for the presence of mind and consciousness, and for meaningful learning. Substantial constraints on any of these constituents must necessarily impose significant constraints on learning. Neglect of this is one fundamental reason that schools fail to educate well.

I am grateful for your thoughtful and insightful reading of "A Need for a New Education." I think you are right that we generate motivation and focus usually for things that we believe are important and relevant for our lives. I would add things that we find curious or entertaining, and also things that other people, who we trust, respect, admire or like, find interesting. Perhaps most compelling are things that we see or experience happening around us that spark an interest to participate. The "I want to try or to do that, too" or "I want to help with that, too" motivations of children are not lost on adults. So, for example, anyone helping others to learn science probably should be themselves publicly (in the neighborhood) engaged in a scientific investigation of their own.

To be truly representative of lifelong learning, a learning park would need around 4,000 participants, about 50% of whom would be adults engaged in pursuing their passions or interests. Odds are that at least 100 of these adults would be doing some form of science.

Regular access of young people to these adults, and vice versa, would have a very compelling effect on learning and discipline. As you say, "I love how inclusive the whole idea is—educating not just children and grandchildren, but parents and grandparents too." The mutual simultaneous learning could be profound. You go on to say, "The Learning Parks idea is a total revamp of what we have currently, and I love that! A place where anyone can come and feel welcome, encouraged, and motivated to better themselves and their community. It's a creative force that can totally change the trajectory we are on. I think the one thing I would attempt to add in there is the teaching of self-discipline."

I understand your concern for teaching self-discipline; it is shared by many. But I believe that the perceived need to teach discipline is a consequence of inadequate learning environments like schools. What we really seem to mean by this special use of the term is the repression of our distaste, disinterest, or revulsion for doing something; or a willingness to do something for which we feel no purpose or motivation. As educators we have to figure out the differences between discipline and obedience. I think self-discipline is largely a natural correlate of need or interest and does not need to be taught. Early examples are seen in the discipline children apply to learning how to walk or talk, and to many other behaviors, both physical and social, that they work to master. This self-applied discipline of youth continues with the many things they see their elders doing that they also want to do. People of any age show great discipline in learning everything from hitting a ball to driving a car to reading a book to playing a violin to building a robot, when they are associated with other experienced people that thrive on these activities.

An effective place of learning would organize itself to utilize these sources of discipline that are more powerful and long-lasting than coercive forms of "discipline" that are actually forms of obedience imposed by authorities and reinforced by rewards and punishments like prizes, privileges, detention, retention, grades, tests, and diplomas (All state governments have criminalized not attending school.), or the promise of money (jobs) that often eludes many young people, especially after they are burdened with college debt. I don't believe that people have to be taught discipline, but they may need context and support in applying it. On the other hand, obedience has to be taught, and people have to be trained in it; and we should be wary of its purposes and consequences. It is almost always justified as being "good for you" or being "required" by some unquestioned authority, or being "necessary" to get something like a good job.

Education should never be obsessed with preparing employees, and to make it principally so is probably unethical, and certainly deprives people of opportunities to become fully human; but that is another issue. I advocate excluding coercion and trusting the learners because, in comparison, the alternative is substantially short-lived and ineffective. It is most especially clear that thoughtfulness and good judgment, creativity and invention, inquiry and application to life are not learned through coercion, but rather through the full and voluntary exercise of a person's own capacities. Of course we would have to accept, or better celebrate, that the outcomes of this will be unpredictable and diverse. And of course to educe this would require exhaustive attention to the qualities and constituents of environments for learning. Of what should these environments consist to most effectively support diverse and complex learning?

The means become the end. The way we get there is what we get in the end. What kind of world and people do we want to end up with? Our means will tell us. "How many goodly creatures are there here! How beauteous mankind is! Oh, brave new world, that has such people in 't."

And there are so many other sources of discipline that are biologically and culturally grounded, such as the impulse to help others. This inclination is extremely strong and readily overcomes our reluctance or disinterest in doing something onerous, but which has a purpose we believe in. This comes from our being social animals and certainly from a parenting instinct, but it has generalized to many contexts. An example I saw involved the 30 teen-aged interns at our science center, who provided science programs for elementary school children. These interns were surrounded by adults who cared about them and who were engaged in experimentation. But what really sustained the discipline to learn science for these teens was the continually growing interest and personal growth they derived from it, and the desire to share and to help younger children learn science.

You ask, "If there is no positive reinforcement (such as recognition or awards) besides one's self-satisfaction, I wonder how that would continue to motivate individuals to better themselves." As you suggest, we certainly respond to our feelings of self-satisfaction, but perhaps even more profoundly we respond to gratitude, respect, love, caring, loyalty, or the needs, cooperation, support and approval of our friends, colleagues, neighbors and community. Because we are social animals, the most powerful "reinforcements" and "rewards" (an inadequacy of these terms is their medication-like, and terminal, and perhaps selfish specificity) are occasions and feelings that arise within sustained, social relationships.

In this kind of context I think would prosper your idea for "a sort of 'anti-elective', where every given time period an individual has to become involved in a topic they've been avoiding." I agree with you that it is educationally beneficial periodically to challenge people to move beyond their comfort. How about minding the kids, or cleaning up, or showing you love me, as well as racism, and what are you voting for, personally offensive topics or opinions you detest, or snakes, Light in August, Hamlet, the car manual, singing, dancing, and topology? And I really like your idea of "someone of relation to the individual (a child/grandchild, a friend, a mentor, etc)" requesting a topic for that person to explore. As you say, "I'm not sure exactly what it would look like, but I do believe there should be some sort of aspect of the Learning Parks that essentially makes people do something they wouldn't otherwise do." Yes. Thanks for improving learning parks with this idea.

I think your observation about students of any age not knowing what to learn is an important one. However, this only becomes a dilemma when we isolate young people in classrooms with a single adult whose principal, perceived activity is to tell those young people (sometimes in charming or participatory ways) what they must remember. People of any age can sustainedly only want to learn something with which they have had some experience. So an effective environment for learning would be filled with a great diversity of people of every age doing every available variety of things for which they have a passion. It is a natural way for people to become exposed to new things. As

you say, "Educators would have to make important topics like history and language arts relevant to the lives of the students, because the students usually won't be able to piece it together themselves (since doing so would necessitate a knowledge of the topic in the first place, that which the student won't have)." Perhaps the best way to do this is for anyone, including educators, to show the relevance in their own lives.

Language arts would be associated with a passion for communicating and imagining, and helping or cooperating and being understood, and history with a passion for storytelling, wonderment at the range of human behavior, and a curiosity about how things got to be the way they are. And you are so right that "making it topical to each student would then require quite a bit of knowledge about the student themselves, since real-world relevancy would differ [from person to person]," but also it would differ from time to time for the same person. So much in education depends on timing, on the confluence of personal developmental strands with appropriate resources and opportunities to use them. There is no predictable, optimal time for everyone to learn to use the calculus. Effective educators would have to maintain long-term relationships with learners. The way schools are organized we can't even come close to understanding and nourishing the complexity of learning in human development.

How do we deal with a complexity beyond the capacity of any one person to embrace or fully understand? We have chosen to lay the burden on the individual, the student, and to blame the consequences on the teachers. The purpose of this is to so constrict and simplify the possible activity and content that there is no room for the unexpected, for the unknown surprises of complexity. The result of this approach is a mechanization of education, with grade levels, graded curricula and graded tests, in which we mass process students in competitive, semester-long events. Teachers are forced by this system to spend most of their time and attention, most of their creative thought, on subject matter information, data organizing and processing, and administration, rather than on understanding each student, and living their passion for something they do. And students spend most of their time and attention on trying to make the grade, or tuning out, rather than on becoming enriched and versatile human beings.

It seems to me an objective absurdity to classify our lives into precise, predictable stages, and for the later first or entire second stage to isolate our young from the workings of the world and society at large by confining them in institutions that occupy nearly a majority of their waking time for much of the year; and to do the same for our most elderly as well. And not only that, but to segregate them narrowly by twelve-month age differences, or points on a test score, or disability diagnoses. It seems even more absurd to classify either learning or curriculum into precise, predictable steps or stages and to insist through institutionalization on the identical scope and sequence for nearly everyone. We are all much too diverse to thrive under such constraints. Experienced teachers may tell you that only valedictorians always can march to the steps of a standardized curriculum.

An alternative to this would be to place the burden of complexity on a lavish and evolving social and natural educational environment, which could absorb, embrace and respond to uneven and unexpected developments from equally unexpected sources. This was the impetus for the learning park idea. It was one idea for moving away from a

confined and relatively sterile school and classroom environment to a diverse and complex learning environment that is in fact an amalgam of different environments, and for moving away from the social isolation of an age-restricted group of peers and a single instructor to an all-age inclusive social milieu with a great diversity of collaborative associations from which to learn, and for moving away from a narrowly defined and rigid in both scope and sequence curriculum to a fluid and agile continuum of practice, full of resources, that can adapt to ongoing changes in learning needs and activity.

The ongoing learning transactions among all these complex constituents are what meaningfully educate, not just teachers in their traditional role as presenters, although educators as facilitators are necessary constituents of any place of learning. However, perhaps the most critical role of an educator is to help determine what specific things (objects, behaviors, people, activities, conversations, etc.) of all kinds could be introduced into the learning environment so as to make it most educative, most supportive of growth for the people involved at the time. But there still remains as much of a beneficial role for chance in education as for research and planning. Healthy educational environments embrace chance.

Since the learning dynamics and constituents for every person are diverse, complex, evolving and unpredictable, and furthermore depend upon ongoing transactions with the available social and natural environments, all of which is far too complex and motile to anticipate, it makes most sense for a humane and effective education to eschew cramming learners into identical, individual, preformed canisters and sending them down a sixteen-year-long vacuum tube, and rather to focus its attention on creating the most rich and complex environments for learning imaginable, and equally to focus on understanding its participants well enough to facilitate their transactions with these environments to be in maximum service of their growth as human beings. Becoming educated is about a lifetime of becoming a person.

Because you are a teacher in a school, I understand your need to distinguish among students and to have methods to do so. But we need to ask ourselves for what purposes do we need to distinguish among students? What purposes would serve the best interests of the learners? How would our attitude or methods change if these students ranged in age from five to seventy-five, or if the purpose were to better understand how each person learned and how to engage their interests; or if the purpose were to become a more helpful educator and effective learner? It seems to me that being "tested, evaluated, judged, ranked, separated, sorted, classified, and placed" are already consequences of distinguishing among people, and are harmful as methods of doing so. These are primarily management conveniences. I do not see how these actions benefit the education or growth of the persons to whom they are applied. However, they certainly affect the opportunities they have, and the resources available to them, and their social and economic status both now and later. I see these as unacceptable sources of inequality.

In many ways our schools have been kidnapped by consequences of our economic system and the beliefs, metaphors, models and motives that drive it. The organizational, management, production and quality control models, the underlying profit motive, the

self-serving, self-aggrandizing behavior that is encouraged, even admired, by this economic system sustain a competitive and radically individualistic, therefore false, psychology that has been incorporated into our corporately structured schooling. Contrary to popular belief, the institutional structure of schooling perpetuates inequality. I believe that even the language we use in schools and the language of educational psychology carry acquired and implicit economic meanings to the detriment of their usefulness.

You wonder, without methods of distinguishing among students, "how others would be able to evaluate the qualities of a person for instances of something like a career. How will a principal know a teacher candidate is the best teacher for the job?" Even though the business world would like schools to evaluate and guarantee a person's qualifications for a job, this remains sketchy at best, and is not a function of education. The truth is that a principal can't know ahead of time which candidate is the best teacher for the job, and school documents don't help. Good principals have good hunches, and these best come from face-to-face encounters. The fact is that one only knows the best teachers for the job after they've been on the job. And this suggests that we should have an entirely different way of hiring teachers, perhaps selecting from long-serving and well-paid apprentices.

Why would we believe that the principal purpose of education should be to prepare and evaluate a person for a future job, rather than to help a person become a life-long learner, thinking deeply and acting generously beginning now; or to train prospective employees, rather than to help each person pursue her or his full, human potential now? Is it not the pervasive and coercive intrusion of the economic system into education? We have entrenched a system that surrenders judgment, decisions and outcomes to wealth, privilege, authority and power, and that excludes or punishes us for being poor, unemployed, underemployed, food or health or safety or home insecure, inadequately documented or diploma'd or insured, and yet makes no effort to multiply types of work or education that lead to continual and personal human development. And although the economic narrative leads us to believe that work is our significant contribution to ourselves, our families, and to society, it is in fact only as a means to income that its true value ensues when we buy things as consumers. So what is being determined by our schooling is our fitness as employees to be consumers, which becomes our principle contribution to the economy and society and to ourselves. The result has been to make our schools centers of training rather than of education.

I know there are exceptions and some wonderful teachers and some joyful learning. But the institutional structures that house them are by and large mis-educative. It may be too soon to create a better, more humane economic system, but it is not too soon to create a better way to educate.

Gratefully Yours,  
Paul