Curiosity Integrated **by Levi J. Neuwirth**, 15-23 September 2025

Four years ago, during my senior year of high school, I began, for the first time in my life, to study *how* exactly one might go about studying itself. I did this in the hopes that it would assist in preparing me for adapting to college, which I knew was going to be at least an order of magnitude more difficult and more interesting than public high school in upstate New York. Yet in my practice of doing this I was subjected to deep conceptual misunderstandings ingrained in me as biases built on assumptions I had never challenged nor even realized laid the foundation of how I experienced learning. It took me all the way until the next time I was in a "senior year" – right now, at Brown – to realize the weight of these assumptions and formulate a response to them, implementing some change by doing so. This is that response.

Prelude: Ideological Seat Belts and Airbags; or, the "Education" system

Curiosity is a defining trait of human nature, one that predates our history, our civilizations, our social customs, and our refined method of inquisition. Curiosity has been a central driving force behind the most remarkable accomplishments of our species, and it will continue to be so for as long as we continue to exist. Yet curiosity can be dangerous, depending on the interests of who you ask. If we are to consider curiosity and skepticism as the cornerstones of original thought, then it is not at all surprising that it is in the interests of many, whether those interests are direct or indirectly associative, to restrain curiosity, restraint skepticism on a systemic level.

Indeed, even if not deliberate, restraint of curiosity is a deeply embedded practice within many layers of our society. This practice of instilled restraint is not a new one; rather, it finds itself amplified by newer elements of our society and institutions that push us collectively towards cultural homogeneity.

An interesting first place to look for restraint of curiosity is the educational system. (In this writing I speak only to the US – the nation which I have been a citizen of for my entire life and thus went to public school in.) The politically inclined among us will be quick to note that programs like No Child Left Behind and Common Core were nothing more than aggressive pushes towards homogeneity (labeled as "standardization," as if the education of the next generation *should* be standardized). We may evaluate this particular push for homogeneity as a case study. The real impetus here was not some systemic standardization but rather the procurement of *any* quantitative metric by which efficacy could be judged. Because, you know, if there's numbers involved, then it must be true! It must be a statistically relevant and sound way of measuring who and what work and who and what fail! There's no such thing as probability and statistics, no such thing as axiom...

Common Core, as much as it stained my educational experience as a young student, is hardly the least of our education system's problems. Any education system where the impetus for learning is not genuine curiosity is bound to be met with inertia. And indeed, the same data that shows my generation's strongest indicator of happiness is a sense of purpose in work (whether academic, employment, etc.) also crucially show that such sense of purpose in high school is fleeting. This was very much the popular sentiment when I graduated high school, too. If you were to go and read the senior quotes from my graduating class, you'd see the majority of them are homogeneous, along the lines of: "Finally I'm getting the hell out of this hellhole! Now I'm going to make a ton of $$ and pursue material wealth!"

The impetus for learning for most students, at least from what I saw in my peers, was either to chase societal notions of "success," aiming for exceptional grades so one could get into an "elite" university, so one could subsequently get a high paying job and build a picket fence and stagnate into some (perhaps boring) manifestation of the American Dream, OR it was simply not present – these were the people who had no real motivation or inclination to continue educationally. Perhaps they had other aspirations, perhaps they had extenuating circumstances to deal with, perhaps something else. In the school I went to there were very few people who were enamored with learning for the purpose of learning, for the purpose of indulging in and satisfying curiosity. I postulate that the reason for this is not a lack of curiosity, nor a lack of potential to cultivate curiosity and desire for knowledge in those who lack it, but rather the cumulative effects of years of conditioning.

We are conditioned from the start that we have to take *these* exams, that we can only use *those* methods for solving an equation, that we can only read *those* books during the school day even if they're trivially easy. You have to take *these* classes, study *these* things because we've deemed them the ones that are important for you; yes, *we* know what is interesting, important, and relevant for you to study far better than *you* yourself could know, even though we refuse to provide you any evidence for our assertions (and you'll be put in detention if you ask). We are conditioned to believe that there is linearity in how everything should be learnt – this is *the* curriculum of subject X, the only way it can be taught, and any other way is not only invalid but will also get you a score of 0 on the exam. Also, you have to raise your hand and beg forgiveness anytime you need to visit the restroom, you can only talk and communicate with your peers at very specific points in the day, and if you don't conform? The very limited autonomy you do have will be restricted even further, to the point that you are no longer simply a human being in confinement but just a statistic in detention's limbo.

To be clear I think that such conditioning is a serious force to be reckoned with. I frequently remark to friends and family that if I do ever have children (which I do not currently plan nor wish to), I would fully intend to homeschool them. For to call this system, one which does not foster the pursuit of knowledge for the purpose of serving a greater interest, for the purpose of contributing to an enterprise of collaboration and meaningful progress, but rather one which indoctrinates and takes away what I argue is the prominent defining trait of our species – curiosity - an "educational" system is a misnomer. At best we call it an echo chamber, at worst we would denote this as an idealistic crime against humanity – what are we stealing from our children, from posterity?

I have met many people at Brown who, like myself, were something of educational "outsiders" in previous lives. I was fully capable of being valedictorian and pursuing all of the accolades I wanted, chasing society's notion of "success," but instead I saw through this and chased my own definition of "success," and that served me well with fulfillment, fostering of curiosity, and development of work ethic. To this day, I do not experience "burn out" – something extremely prevalent in college students - and I see that many of my peers also do not experience this. The clear indicator in my experience of whether someone will experience burn out is the presence or absence of genuine curiosity in that person. It should be considered reprehensible that we steal such curiosity through our education system. I feel extremely grateful to have had the opportunity to study in an environment like Brown where so many of my peers are genuinely curious. My time here has yielded me many great conversations, many deep discussions and a wealth of friendships, knowledge, and memories which I shall cherish forever.

Instant Gratification in the age of LLMs

Not only is the entire philosophy of how we go about ~~teaching~~ indoctrinating students wrong, but it instills in students a conception of "learning" which really has nothing to do with building a long-lasting and fundamental knowledge of any topic, even the most trivial.

Take, for example, multiple choice questions. The bulk of the Advanced Placement exams, Regents (New York State's implementation of Common Core) exams, and the entirety of the SAT are multiple choice exams. I hate to break it to you, but multiple choice is a reinforcement of instant gratification. One can instantly select the answer that seems to be the most correct without putting any thought into their selection. I vividly remember being in fourth grade and getting to my classroom early one morning, before the day had truly started. There, I just happened to stumble upon a conversation I have not forgotten since: the teachers (our school at the time was piloting a program in which the "talented and gifted" students were mixed with "special needs" students, and so the latter group had their own dedicated teachers who cycled around the 3 or 4 distinct fourth grade classrooms) were discussing the fact that the school district's administration was enforcing the teaching of "process of elimination." Once again, I hate to break it to you, but this says everything: rather than actually *teaching* students the material they've set out to learn, that taxpayer money went to standardize, that your democratic process so artisanally yielded, you are teaching them how to take shortcuts in the hopes that their doing so will give better metrics (which, again, have literally no meaning, no statistical relevance) and thus keep you employed. I didn't think much of this then, but I do remember thinking that process of elimination was for fools and that I didn't need it. (I was told I was "talented and gifted," and this built within my fourth grade self some substantial intellectual arrogance.)

Instant gratification and shortcuts to the actual procedural acquisition and development of knowledge are not a problem unique to those who are in school. In fact, it has become the norm in our society that when our curiosity is piqued, our response is not to try to think critically, not to try to determine an answer for ourself, but rather to offload the work to some other source. This used to be the mindless and ambiguous phrasing of our piqued curiosity's quandary into a query for some search engine. Indeed, in many cases folks would be satisfied with the summary provided by the first or second link displayed in response to their query, and five minutes later they'd not only have no recollection of what they learned, but also no recollection of what exactly it *was* that had piqued their interest. The few that did take deeper dives would be satisfied and perhaps left with something to go off of, but in many more cases probably fall victim to the same thing – very limited retention, but a feeling of accomplishment, of intellectual satisfaction. I myself was extremely guilty of this for many years with many prolonged evenings spent in Wikipedia rabbit holes. I don't regret the joy that this activity gave me, nor do I regret the fact that it pushed me into becoming an editor on Wikipedia, but I do regret that I could not tell you what prompted a single one of my rabbit hole evenings.

This problem is worse now with the advent of LLMs. We now have a tool which, although much better at parsing and extracting meaning out of queries than a traditional search engine, is much more fallible – we have hallucinations, manifestations of limitations in training that result in objectively false and made-up responses delivered with supreme confidence. We now also see that LLMs are not always neutral actors. We know that there is censorship baked into the models – if you've used an LLM, ask yourself how many times you've seen the archetypal "As an AI model, I cannot answer this…" response – but what happens when the LLMs decide what *they* do and do not want you to know? (And how do you know, unless you are exclusively using self-hosted open source models, that you aren't subject to more censorship than you think?)

The problem of the so-called “filter bubble” was already a major one with search engines – indeed, this intellectually devastating phenomenon is still being marketed as a feature by, among others, Kagi, and implicitly assumed in the name of profits by the big names like Google, et al. The filter bubble will only get worse when we allow all of our interaction with knowledge to be facilitated by an intermediary that we not only have absolutely no control over, but one that is also far superior in intelligence to us and not unwilling to impose its will.

Bloom’s Taxonomy

Indeed we have subjected ourselves to the will of corporate filter bubbles in exchange for instant gratification with respect to curiosity – but if we truly wish to quench our thirst for knowledge, we must remain aware that we are deceiving no one but ourselves in this process.

Have you ever wondered what separates those who speak a bit of a language from those who can write poetry, give lectures, and hold political debates in a language that isn’t their mother tongue? What about the separation between those who can write a few words on a subject and those who can write an entire series of nonfiction books on the same subject? What’s the separation of a student learning material for the first time in lecture and the expert professor who has already given the same lecture in 15 previous semesters? Is there a framework by which we can understand the levels through which learning progresses? It turns out there is, and that framework is called Bloom’s Taxonomy.

The lowest level of the hierarchy that the taxonomy presents is “remembering” something. Do you immediately sense where I’m going with this? I bet you do – multiple choice, the SAT, Common Core, and the entirety of standardized public-school education in the name of quantitative metrics never quite supersedes this level. The writing section of the SAT, for instance, is much more about memorizing the types of questions that might appear and the patterns that give away the answers than it is about anything related to writing. You’ll never be asked to explain ,analyze, or synthesize if the entire test simply relegates you to choosing from A, B, C, or D. (Or, perhaps if you are unlucky, A, B, C, D, or E.)

In stark contrast, the upper levels of the taxonomy relate to output. Analysis is one type of output. Students who do some critical thinking after a lecture and then use the Feynman Technique or do a braindump are shown to have better learning results than students who do no such thing, instead simply setting their goal at nothing more than recalling what was said in lecture. Students who write a paper where they are forced to commit to an argument that they derive from their analysis of some subject and then present evidence to support their argument have engaged in a much richer intellectual process than students who have simply been required to write a paraphrased summary of what they learned.

The best way to foster knowledge, then, is not to instantly gratify our curiosity at only the lowest level of the taxonomy. It is instead to choose the themes and subjects that captivate us the absolute most and to dive as deeply as possible into them. Thus, in our education system, we should do the same. Why should we force students with no interest in mathematics or no interest in history to continue to study those subjects? Once a baseline has been acquired (this is the “elementary” in elementary school), we should be pushing students into the things that they find the most engaging and curiosity-sparking. That is where the potential for the deepest learning will always be. There and nowhere else.

Ok, but isn't recall important?

Believe me, recall is still extremely important. You shouldn't throw out everything you've mastered about memorization, flashcards, etc. based on what I'm arguing here! But you should understand that recall and memory are just a single component of the vast procedural of the acquisition and development of knowledge. (Note that I use *two* distinct words, "acquisition" and "development." This quantity of words is not by accident.)

I am still a fanatic advocate of spaced-repetition and Anki. The only difference between me and all of the other Anki advocates (that sounds like an awesome name for a band, by the way – any fellow people with 300+ flashcards a day want to do something with me about this deficit of an Anki Accumulation of Aesthetic Assonances?) is that I only use Anki for what it is – a means for supplementing practices that dive me deeper into the hierarchy. I use Anki to give myself a space where I am forced to do active recall, and rather than formatting my cards with an answer, in almost all cases, I actually just have the backside of the card say "were you right?" and nothing more. This forces me to go back to primary sources and reignite whatever I learned rather than instilling brute memorization. As for vocabulary in foreign languages, which is my primary use of Anki, I have a system by which many sentences containing some word, idiom, or phrase are pulled and then a random one is shown. The backside of the card contains many links to definitions of the word, information on etymology, etc., all entirely in the target language (no English!). Notably, there is **no** instant gratification here. Everything has to be a comprehensively active process within Anki, and Anki itself is one component out of many – much more of my time is spent reading, writing, and engaging in other practices which are higher up within the taxonomy.

In the past, when I first discovered Anki, I did use it in the more stereotypical way – for instance with vocab, simply putting a word on the front side of the card and the English translation on the back. In fact, I can't remember a single word that I did this for off of the top of my head, which probably speaks to the fact that I wasn't making it very high up the hierarchy. I certainly didn't end up using any of those words in conversations at that time, even if I was fooling myself into thinking this was a productive practice!

Returning Curiosity through Activity

If curiosity has been stolen from us, the good news is that we can most certainly retrieve it. By engaging in active learning processes, rather than simple instant gratification at (or, often, *below*) the level of memorization, our natural tendency to inquire further and desire a more fundamental understanding will subtly make its way back into our daily life. The "anesthetic of familiarity" is not that different from any other anesthetic – it is not permanent. It will fade away if you allow it to.

We should not stop at the point where we have a basic understanding in response to some external compulsion for learning, whether that is a question deliberated in class or a flash of curiosity or some other point of emanation. We must strive to foster within ourselves the process of always seeking to dive deeper, for it is this which ultimately enables us to achieve the highest level of the taxonomy – **to create**. Indeed, if we are to create ourselves, to create some semblance of the person we are, then we must do so by a cumulative aggregation of knowledge, perspectives, character, and ideals. I personally do not want myself to be defined only by what I have cached away and memorized!

Conclusion

No one is infallible. We have all, whether directly or indirectly, had our sense of curiosity taken from us to at least some extent. For those who are concerned with the notions of societal "success," this leads to learned helplessness and immense frustration when hours upon hours of conventional studying and memorization don't lead to retaining of knowledge and good grades. It also may contribute to impostor syndrome, by which we feel that we lack some ability to inquire and learn that others around us have.

Until widespread systemic reform can be achieved (*if* it can be achieved, at all, that is), the burden lies on the individual to create a framework in which genuine learning does follow from curiosity. Perhaps one may see this as a challenge to rise to – it's more fun this way, not knowing, after all!