

Poetry and Math:

The Philosophy of Education throughout History

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Introduction

Have you ever watched a documentary about some subject you had in High School and had the realization that you never actually learned that subject? You realized after watching the documentary that you actually did not learn as much as you may have wanted to in High School. I feel this is a common occurrence for people. I have had it myself. One time I watched a documentary on World War II and the United States role in it. I was surprised about how little I actually learned from my history classes with regard to the second "great war". When I thought back to my classes in High School, I only remember dates and leaders. The documentary went more in depth and talked about how Pearl Harbor brought us into the war. How FDR may have known about it, how the U.S. set up internment camps for Japanese-american citizens. The documentary spent the time to show how something like Pearl Harbor shakes a nation. How it created harm for some citizens and inspired others to go to war. In my classes, though, Pearl Harbor happened on December 7th, 1941, and it was why we entered World War II.

When I think about my High School experience, I feel that I learned more from my AP classes than I did from my on-level classes. For example, I took AP World History in the 10th grade and then on-level US History in the 11th grade. I really enjoyed my AP history course. It challenged me in ways other classes did not at the time. The answers to test questions were never anything like "when did X occur?" or "where did Y first appear?", the questions that were asked were more how or why. It was more important to figure out why things happened the way they did and how these things affected the future. The teacher tried to fully explore the cultures of the time and how certain inventions, or people, influenced these cultures. When I took on-level US History, I was expecting it to treat history the same way but just apply it to US history. Unfortunately, this class returned to the simplistic testing regime of "When?", "Where?", and

"What?". At the time I didn't really care, it was a free "A" on my transcript after all, but I later got frustrated with this class because it felt like I never *really* learned US History.

This thought lingered with me throughout my college career. Some classes you learn something while others you *LEARN* something. I assumed for a little while that it was just the distinction that AP classes were simply better designed than on-level classes in High School. AP classes are supposed to be closer to college classes than on-level and college classes seemed to be better for learning. College classes go more in depth in subjects and take on multiple points of views. There is usually a lot more critical analysis in college classes than in High School classes. If you examine a subject multiple ways from multiple perspectives, then you probably have a better understanding of the significance of that subject. To use history as an example: if you study history as a collection of dates, then you miss out on the human component of history. If you spend time to study the human component of history, then you have different ways to look at the same event. You could look at the event through a political lens, a religious lens, a social lens, etc. Each of these lenses brings about a different way to look at a moment in history. To me, this is what College does for people. It gives a new lens to see life through. AP classes are supposed to be the step between High School and College. So, it made sense that I would feel that I learned more from my AP classes than my on-level ones.

Yet, I have met AP students who feel that they did not learn anything from their AP classes. Even people who were in my same AP World History class as well as my same on-level US History class felt like they really did not learn anything from either. Others felt they learned something from another AP course but not specifically World History (or even more specifically: *that* AP World History course). Perhaps the teacher just did not work for them. The way he spoke just confused them more, but it made perfect sense to me. After all, I have had that issue in

English classes where it took me a very long time to get what the teacher was talking about while others got it quickly. Perhaps they did not receive an explanation in a way where they could hear it and understand it. Their own personal experiences and biases made it difficult for them to take in the information. Perhaps they were just "doing the class for the AP credit" and they were not involved in really trying to learn at all; learning how to test instead of learning the information. There could be many reasons why some people learn, and others don't, but the important part is that this problem is a common problem for everyone and if this is such a common occurrence from people of different High Schools and experiences, then the problem may be structural instead of personal.

In this paper, I will examine three key figures in the history of the philosophy of Education: Plato, Rene Descartes, and John Dewey, and compare their goals as well as track the major changes in the Philosophy of Education over History. I will ask questions like "What are the goals of education?", "What is the role of reason in education?", "Does experience play a role in education?", among others to determine what some of history's greatest intellectuals believe "good education" really is.

Plato

Plato's contributions to the philosophy of education come in three distinct ideas. (1) There is a multiplicity of truths that should be learned through a system of education with different ways to learn them. (2) Reason is the goal of education instead of the common notion that reason is a tool for education. (3) There is a moral worth to education. These ideas were discussed within Plato's works, many of which are related to Plato's Republic, his utopian city. Here Plato discussed the education of the Guardians who will protect the city from outsiders.

In Plato's Republic, he points out the importance of myths in early education. These stories are "false, on the whole, though they have some truth in them" (Book II, 377a-b). Myths may not be factually accurate, but they still offer truths in other regards. Myths can provide truths that may be religious or existential in nature. They can help explain concepts in ways that science can't. One can learn many truths from myths, whether religious, spiritual, or social. Plato wishes that children are told the stories of Homer, Hesiod, and other poets which give a good image of heroes and the gods. Myths like this should be told to children since they are young and intellectually malleable. Myths that don't subscribe to these ideals should be kept but not spoken to the children (Book II, 377a-378b). After all, these myths will teach the values of piety and justice that Plato wishes the republic to eventually hold.

This idea that myths provide insight to deeper truths is still a part of education to this day. I feel it is pretty common for children to be taught myths in early education. Whether they learn religious myths from their families or other myths from school, children learn myths. I remember stories like the Tortoise and the Hare, the Scorpion and the Frog, or even George Washington and the cherry tree. These stories provide ideas of what makes a person good which is what Plato

wants the myths to do. My issue is that these myths should eventually be fully interpreted so that the underlying truth is displayed.

The cherry tree myth is a perfect example of this. I think it is fine to have a myth that showcases our founding father as a virtuous human being as long as one day the student is eventually taught that this founding father and many others were not as virtuous as the myths showed them to be. I feel it is unhealthy to teach myths as literal stories, as opposed to the symbolic interpretations of deeper truths. In my experience in high school, there wasn't a whole bunch of time devoted to showcasing the flaws of the founding fathers. If I was lucky, maybe it was acknowledged that they owned slaves. I think this hurts the intellectual potential of students because they get stuck in believing in a lie, and idealizing an imperfect time and people. This can make it hard to combat racism in the modern day within a democracy because some people don't think that our founding fathers were anything but virtuous. Education should help the democracy grow stronger not weaken it. This is something that John Dewey notes with his philosophy.

As we will see, Plato explains the effect of education by his Analogy of the Cave. He wants the reader to imagine a cave where prisoners are chained up against the wall and cannot move. These prisoners can only see the wall in front of them on which are shadows that come from a fire and puppeteers who craft the shadows that these prisoners see. Plato believes that the uneducated and those who remain too tied to sense experience and selfish values are the prisoners. (Book VII 514-517c). They only see the shadows created by the fire and the puppeteers. They do not experience reality to its fullest and are chained down to only see a specific view.

Next, Plato wants us to imagine that a prisoner is set free and is allowed to leave the cave for the first time in his/her life. How would the prisoner feel when they learn that his/her entire

worldview was shadows on the wall? Would the prisoner be scared or would they "be puzzled and believe that the things [they] saw earlier were more truly real than the ones [they were] being shown?" (Book VII 514-517c). Plato believes that if the prisoner saw the light at the entrance of the cave, then it would compel them to leave the cave. Once the prisoner left the cave, they would feel pain from seeing sunlight for the first time and may even turn around and run back into the cave where they are more comfortable. Yet, once they are outside long enough, their eyes would eventually readjust, and they would begin to see the world as it truly is. Plato believes the prisoner would see images of things in water first, then the things themselves, and finally the prisoner would look up to the sun and finally come to an understanding of the visible world and how it is (Book VII 514-517c).

Now what if the prisoner returned to the cave to help the other prisoners? Plato believes that the prisoner would be ridiculed by those who never left the cave. After all, the prisoner who left now has to readjust to the darkness, so for the captive prisoners it seems as though the light of the outside world has damaged the prisoner's eyesight. If the prisoner tried to explain everything they learned outside of the cave to the captive prisoners, then they would see this as crazy or unhinged rather than as truth from an enlightened individual (Book VII 514-517c). Plato even goes as far as to claim that the captive prisoners would kill the freed prisoner. That is what Plato experienced with Socrates, after all.

Plato believes that this is how true education should work. As he states in Book VII of *The Republic*:

"The realm revealed through sight should be likened to the prison dwelling, and the light of the fire inside it to the sun's power. And if you think of the upward journey and the seeing of things above as the upward journey of the soul to the intelligible realm, you won't

mistake my intention—since it is what you wanted to hear about. Only the god knows whether it is true. But this is how these phenomena seem to me: in the knowable realm, the last thing to be seen is the form of the good, and it is seen only with toil and trouble. Once one has seen it, however, one must infer that it is the cause of all that is correct and beautiful in anything, that in the visible realm it produces both light and its source, and that in the intelligible realm it controls and provides truth and understanding; and that anyone who is to act sensibly in private or public must see it." (Book VII 514-517c)

Plato believes that education should guide the student from the realm of the visible or the "realm revealed through sight" and it should guide to the intelligible realm where things are understood as they truly are. It is only in the intelligible realm that truth and understanding really exists. Everything in the visible realm is only a shadow of what really is. This is an important concept in Plato's *Metaphysics*, and it is important for his views on education. He believes that people should be taught in a way that they recognize the good, or the light in the analogy of the cave, where truth and understanding are.

It is important for Plato that people learn what things are and they don't learn the representations or imitations of them. He acknowledges that some people may exist in different parts of the process of education or different parts of escaping the cave. He notes that there were two parts in his analogy where the prisoner's eyes were confused: when the prisoner first saw sunlight and when they first returned to the darkness (Book VII 518-518b). He brings this up to note that the common belief of education as adding knowledge into souls is as absurd as putting "sight into blind eyes" (Book VII 518b-c). But, nonetheless, he believes that the power to learn is in every soul. The only issue is that the soul must be guided. As Plato states:

"Just as an eye cannot be turned around from darkness to light except by turning the whole body, so this instrument [the thing which each of us learns] must be turned around from what-comes-to-be together with the whole soul, until it is able to bear to look at what is and at the brightest thing that is—the one we call the good" (Book VII 518c-d). This instrument that turns our souls toward the good is reason. Reason helps us determine what is true and good. Once we have escaped the cave and seen what really is, we begin to understand reason itself. The goal of education is to allow for students to escape their cave and begin to understand reason.

Later in the Republic, Plato talks about the importance of training the Guardians in Mathematics. Plato believes that mathematics, by nature, is one of the subjects that can lead one to true understanding. Mathematics is a guide to reason. It naturally stimulates "the understanding" of reason but "no one uses it correctly, as something that really is fitted in every way to draw us toward being" (Book VII 522e-523a). Learning mathematics as a way to count or measure things is counterproductive in Plato's eyes. He wants a deeper understanding of mathematics, one beyond the tangible realm. An understanding of numbers themselves, in the abstract sense, is more profitable for Plato's Guardians than simply being able to calculate.

Plato believes that an understanding of mathematics, mainly the idea of one thing rather than idea of multiple things, will lead people to see the intelligible realm. Once somebody can understand that there are two things instead of one, then Plato believes that it is intuitive to conclude that the two things may be "obviously one and distinct" (Book VII 524b-d). If there are two separate ideas or concepts then each of those concepts are their own distinct idea which makes each of them one and distinct. To reiterate: If you can distinguish two things (ideas, numbers, etc) then you inherently gain the understanding that those two things are separate. Plato

believes that each of these things, no matter what they are, are each one and distinct in themselves. For example, if one understands that $1 + 1 = 2$, by understanding this one can infer that each "1" in the equation is its own separate thing. There are two distinct 1's in the equation and when we put those two separate and distinct 1's together we get two 1's. We can then say that these two 1's are their own separate and distinct idea that we named 2. 2 is separate and distinct from both of the 1's and it is a whole idea in itself.

As he states in the *Republic*:

"If the number one is adequately *seen* just by itself, or grasped by any of the other senses, then just as we were saying in the case of fingers, it would not draw the soul toward being. But if something opposite to it is always seen at the same time, so that it no more appears to be one than the opposite of one, then there would be a need at that point for someone to decide the matter. And he would compel the soul within him to be puzzled, to inquire, to stir up the understanding within itself, and to ask what the number one itself is. So, learning about the number one will be among the subjects that lead the soul and turn it around to look at what is" (Book VII 524e).

What Plato is saying here is that if the concept of the one and distinct is just observed through the senses or through day-to-day life, then it would not draw the soul to dig deeper and come into the intelligible realm. It is only when the soul takes the time to understand how numbers are in concept, that the soul will be able to apply their idea to other things outside of mathematics, i.e., reason and the good. Therefore, mathematics is an important concept in the training of his guardians, but it should be taught in a way that encourages the deeper insight into mathematics rather than as a tool and practiced "for the sake of knowledge rather than trade" (Book VII 525d-526b).

He argues that subjects like science and astronomy are missing the point of mathematics, which is not its applicable uses but rather understanding itself. As Plato puts it: "In the same way, whenever someone tries through argument and apart from all sense perceptions to find the being itself of each thing and doesn't give up until he grasps the good itself with understanding itself, he reaches the end of the intelligible" (Book VII, 532a-b). The goal of learning math is to develop logic tools that can make one reasonable. Reason is not the tool for education, it is the goal. Education should make you more reasonable. The practical uses of mathematics aim people in the wrong direction. People who become so involved in the practical uses become so focused on the "talk of squaring, applying, adding, and the like; whereas, in fact, the entire subject is practiced for the sake of acquiring knowledge" (Book VII 526e-527c).

The study of astronomy is a perfect example for Plato on how mathematics is used incorrectly in the sciences. As he states in the *Republic*:

"If someone were looking at something by leaning his head back and studying ornaments on a ceiling, it seems as though you would say that he is looking at them with his understanding, not with his eyes! Maybe you are right and I am foolish. You see, I just cannot conceive of any subject making the soul look upward except the one that is concerned with what is—and that is *invisible*. If anyone tries to learn something about perceptible things, whether by gaping upward or squinting downward, I would say that he never really learns—since there is no knowledge to be had of such things—and that his soul is not looking up but down, whether he does his learning lying on his back on land or on sea!" (Book VII 529a-d)

The sciences focus too much on the senses and not enough on the concepts themselves. Plato believes that this focus on the senses doesn't actually bring any knowledge. These are the people,

in Plato's Cave analogy, who were obsessed with the shadows created by the fire on the wall. Scientists are simply gathering information about shadows for Plato. They are not getting the real information which is the sun outside of the cave. These people are distracted in things that are material and transient. Rather than true knowledge which is abstract and eternal. Plato is, after all, a rationalist through and through and he believes that knowledge comes from our ability to reason rather than from any outside influence. So, it makes sense that he designs his education around the idea on our reason and ability to discern ideas rather than a focus on our senses and gather knowledge from them.

Having spent some time in the sciences myself, I don't really enjoy Plato's discredit of them. I understand his reasoning, but I think that there is value in the sciences. I think that a balance of empiricism and rationalism is important so that we don't get stuck in either direction. The sciences are more complex now than they were in Plato's time, and I think it is good for the human race to promote scientific thought and certainty among ideas. As we will see, this is something that René Descartes focuses on with his Philosophy.

I do agree that mathematics itself can be very influential in leading oneself towards reason. The only issue is that mathematics, from my experience as it is taught in high school, only seems to guide those that are already inclined to mathematics. For example, many of my friends who were good at mathematics, all seemed to be able to make this jump out of mathematics and into rationalism but not everyone in my class did. Nor did anyone else who took these classes. There is a common notion that high school math classes are "useless", by many people who struggle in mathematics, which indicates that the goal of mathematics is not getting through to people. This is a shame. Not everyone will be able to make the jump between solving for x and turning oneself towards the good by themselves. I think that everyone could be

able to do this, but it would be more difficult for those that aren't already inclined to mathematics. Maybe an emphasis on what the goal is within a mathematics class should be made clearer, and/or the usual goals should be reinterpreted toward something more valuable.

Plato believed that a reasonable man would be able to recognize contradictions in his thinking. He thought that "the purification of the soul from its contradictions" would lead oneself to knowledge and understanding and ultimately eudemonia (Scolnicov, pg. 256). Eudemonia, translated to mean a state of good spirit or living well, is important for Plato. He believes that a life free of contradiction would be a just life because "wealth does not bring about excellence, but excellence brings about wealth and all other public and private blessings for men" (Apology, 30a-b). Ridding oneself of contradictions and becoming reasonable will allow us to live well. If an entire society did their best to live well, in the eudemonic sense, then people would live better.

This is because those who live an opinionated life have goals that will not truly satisfy them and may result in the harm of themselves and others. Goals for wealth and power are examples of these lives. Plato believes that if you spend the time to rid yourself of philosophic contradictions then you can know that you are truly just. You know your ideals and you understand why you have your ideals. You are not a product of your society alone, because Plato believes these people are not truly moral but instead are just morally lucky. He believes that when we don't take the time to consider ourselves then we simply have the base morality that we all have. We want pleasure and do not want pain. We desire goals like wealth and power because we think that these goals will bring happiness. Yet, this type of happiness will not last. Plato believes that if you spend the time to truly figure out what you believe in, you can be certain that you are correct and you are not simply going through the motions. You are not chasing

hedonistic dreams but are instead living a logical life. You are learning where your initial thought processes go wrong and becoming more consistent with your logic. This logical consistency will lead to a more content happiness, that is long lasting and good. As Plato states in the *Apology*:

"The greatest good for a man to discuss virtue every day and those other things about which you hear me conversing and testing myself and others, for the unexamined life is not worth living for man" (Apology, 38a)

When people take the time to reason out their thoughts and actions, they usually become more moral. Plato believes that this process, which is his education system of the guardians, does make people more moral and therefore there is a moral worth to education.

I agree with Plato (as well as Descartes and Dewey) that there is a moral worth to education. Each of the Philosophers tend to have different reasoning for why there is a moral worth but all three believe that a good society has a good education system. In my experience, education has only improved my life. Every time I have learned something that has opened up my eyes to see the world in a different way, I feel that I am more content with myself and my place in the world. I feel that I have grown to be more compassionate and more understanding of others as well. This is a common experience for those that actually got something from education. Those who feel that education was "out to get them" or simply that they did not learn anything usually feel that their compassion may come from other religious or personal experiences.

Plato's philosophy of education was very influential for western thinking. His effect came in three distinct ideas. These three ideas were: (1) There is a multiplicity of truths that should be learned through a system of education with different ways to learn them. (2) Reason is the goal of education instead of the common notion that reason is a tool for education. (3) There is a moral

worth to education. The three distinct ideas discussed were used in Plato's academy which became the blueprint for education in Europe. By the time of Descartes there have been two millennia of ideas that had changed Plato's thought into something more religious and opinionated. The same thing happened to Aristotle's views of education and knowledge, and they were pit against one another in the early modern world. I will next explore the educational ideas of a seminal early modern thinker, Rene Descartes.

Descartes

Rene Descartes lived from 1596 to 1650 C.E. in France. He was an astute mathematician and philosopher. He is the founder of the Cartesian system as well as Analytic Geometry. He lived under a monarchy and was involved with the academia of his time. The most common academic view of his time was the Thomist view. This view stems from the Catholic philosopher St. Thomas Aquinas and was the view that all knowledge stems from sense experience. This was an idea that Descartes attacked. Many Thomists would use sensory input and syllogistic logic to determine truths. They believed that all of their knowledge begins with sense experience. We could then use syllogistic logic as a way to demonstrate and present the relationship between general regularities and particular facts. An example of this would be:

All humans are mortal.

Descartes is a human.

Therefore, Descartes is mortal.

This reasoning is sound, yes, but for Descartes it is not enough. Descartes believed that this type of reasoning only repackaged the truths that we already know. You can't use syllogistic reasoning like this to discover new ideas. It limits your thinking. If you tried to use this reasoning to explain each premise, you would not really discover anything new because all of the premises are connected in a way. You may know humans are mortal and if you know Descartes is human then understanding that Descartes is mortal is not a stretch. Yet, if you tried to discover something completely new, without the basis of ideas already known, then syllogistic reasoning can get you cornered. This is what frustrated Descartes. Descartes wanted to push the envelope on what can be known or understood, and the Thomist approach did not allow for this in

Descartes eyes. He wanted more than just "right thinking" he wanted certainty. As he states at the beginning of *Discourse on Method*:

"Good sense is the best distributed thing in the world, for everyone thinks himself to be so well endowed with it that even those who are the most difficult to please in everything else are not at all wont to desire more of it than they have. It is not likely that everyone is mistaken in this. Rather, it provides evidence that the power of judging well and of distinguishing the true from the false (which is, properly speaking, what people call "good sense" or "reason") is naturally equal in all men, and that the diversity of our opinions does not arise from the fact that some people are more reasonable than others, but solely from the fact that we lead our thoughts along different paths and do not take the same things into consideration. For it is not enough to have a good mind; the main thing is to apply it well" (Descartes, pg. 1)

Already there is a major difference between Plato and Descartes. Plato believed that people could become more reasonable with education resulting in some people having more reason than others. While Descartes believes that everyone shares the same capability to be rational, regardless of education. The reason people have different opinions is due to the fact that they focus their thoughts on different ideas. So, for Descartes it is more important to learn how to apply one's reason rather than simply accumulating reason.

Around the 1630s, Descartes wrote the first draft of his *Discourse on Method* and later *Meditations on First Philosophy*. In the *Discourse on Method*, Descartes develops four laws to guide one's thoughts:

"I believed that the following four rules would be sufficient for me, provided I made a firm and constant resolution not even once to fail to observe them: The first was never to accept anything as true that I did not plainly know to be such; that is to say, carefully to avoid hasty judgment and prejudice; and to include nothing more in my judgments than what presented itself to my mind so clearly and so distinctly that I had no occasion to call it in doubt. The second, to divide each of the difficulties I would examine into as many parts as possible and as was required in order better to resolve them. The third, to conduct my thoughts in an orderly fashion, by commencing with those objects that are simplest and easiest to know, in order to ascend little by little, as by degrees, to the knowledge of the most composite things, and by supposing an order even among those things that do not *19* naturally precede one another. And the last, everywhere to make enumerations so complete and reviews so general that I was assured of having omitted nothing."

(Descartes, pg. 11)

Descartes believed that one should not accept anything as true unless it is evident. Certainty is important to the metaphysics of Descartes. So, it makes sense that the first rule is to make sure an idea is certain. Like a true mathematician, Descartes then encourages us to divide any problem into the greatest number of parts for a simpler analysis. Descartes was inspired by the proofs of Geometry and this way of thinking definitely had an effect on his philosophy of education as shown in his second rule. The third rule is to start with simple objects and progress towards more difficult objects to study. This is another idea that comes from mathematics. Solving the small, easy problems, then use these answers to tackle larger, more complex problems. The final rule is to constantly review our thoughts for logical contradictions. This rule makes it so that we don't become absorbed in the idea that we are right and never take the time to reexamine our thought

processes. An understanding that Descartes most likely felt was lacking with his opinionated professors. If one spends time to make certain their thoughts are "more" certain than others, then one can be more comfortable that their beliefs are true. These beliefs have been fact-checked. Usually when we deem people as "opinionated", we believe that they may not have as much rational certainty in their beliefs as others. They believe in their opinions more than fact. Descartes included the fourth rule in his method to help us not fall in this trap. His method focuses less on sensory input and returns to a more reason-centric model for understanding ideas. This method of approach is what Descartes wants to be applied to education. If we can teach people to be able to follow these rules, then everyone would be able to be more reasonable in Descartes's eyes.

Descartes Philosophy of Education shares a lot of key points with Plato. Descartes agrees with Plato that education has a moral worth. That is, a good education will bring about Eudaimonia. Ridding oneself of contradictions is an important part of Descartes philosophy. The fourth law of his method is a case in. Constant review allows for constant reanalysis of the subject which can bring light to new insights or old contradictions. As Descartes states in the beginning of the 1st Meditation:

"Several years have now passed since I first realized how numerous were the false opinions that in my youth I had taken to be true, and thus how doubtful were all those that I had subsequently built upon them. And thus I realized that once in my life I had to raze everything to the ground and begin again from the original foundations, if I wanted to establish anything firm and lasting in the sciences." (Descartes, pg. 59)

Both Plato and Descartes believe in getting rid of contradictions within the mind. They both want reasonable logically consistent people. Both believe in the power of reason to bring this as well. Both believe that our knowledge comes from our ability to reason out ideas.

Descartes has more of a focus on certainty than Plato does, and this is very important in Descartes view of education. Descartes despised the Scholastic view of education of his time which was very opinionated. He believes that the goal of education should be to help develop intellectual faculties in the student that would make them more reasonable instead convincing them that your side of the argument is the correct one. This is similar to the way that Plato argued that Sophists are not actually teaching knowledge. Though the emphasis on certainty is the main driving point for Descartes. As he states in Part Two of *Discourse on the Method*:

"I had learned in my college days that one cannot imagine anything so strange or so little believable that it had not been said by one of the philosophers, and since then, I had recognized in my travels that all those who have sentiments quite contrary to our own are not for that reason barbarians or savages, but that many of them use their reason as much as or more than we do. And I considered how one and the same man with the very same mind, were he brought up from infancy among the French or the Germans, would become different from what he would be had he always lived among the Chinese or the cannibals, and how, even down to the styles of our clothing, the same thing that pleased us ten years ago, and that perhaps will again please us ten years hence, now seems to us extravagant and ridiculous. Thus it is more custom and example that persuades us than any certain knowledge; and yet the majority opinion is worthless as a proof of truths that are at all difficult to discover, since it is much more likely that one man would have

found them than a whole multitude of people. Hence I could not choose anyone whose opinions seemed to me should be preferred over those of the others, and I found myself, as it were, constrained to try to guide myself on my own. But, like a man who walks alone and in the dark, I resolved to go so slowly and to use so much circumspection in all things that, if I advanced only very slightly, at least I would effectively keep myself from falling. Nor did I want to begin to reject totally any of the opinions that had once been able to slip into my head without having been introduced there by reason, until I had first spent sufficient time planning the work I was undertaking and seeking the true method for arriving at the knowledge of everything of which my mind would be capable."

(Descartes, pg. 9-10)

Descartes believes that anybody could state anything. They could craft some argument about anything whether true or false. Descartes did not like this. He wanted a more solid foundation for the things we believe in. He wanted certainty.

This is one of the things about mathematics that interested Descartes. Mathematical proofs are true no matter what. They are pure reason. Each part leads to the next part and that part leads to the next and so on. While Plato saw mathematics as a good introduction to reason and the attainment of knowledge, Descartes saw it as the proper blueprint for attaining knowledge. The following quote immediately follows the 4 rules:

"Those long chains of utterly simple and easy reasonings that geometers commonly use to arrive at their most difficult demonstrations had given me occasion to imagine that all the things that can fall within human knowledge follow from one another in the same way, and that, provided only that one abstain from accepting any of them as true that is not true, and that one always adheres to the order one must follow in deducing the ones

from the others, there cannot be any that are so remote that they are not eventually reached nor so hidden that they are not discovered. And I was not very worried about trying to find out which of them it would be necessary to begin with; for I already knew that it was with the simplest and easiest to know. And considering that, of all those who have hitherto searched for the truth in the sciences, only mathematicians have been able to find any demonstrations, that is to say, certain and evident reasonings, I did not at all doubt that it was with these same things that they had examined [that I should begin]; although I expected from them no other utility but that they would accustom my mind to nourish itself on truths and not to be content with false reasonings." (Descartes, pg. 11)

This quote, and its proximity to the 4 rules, indicates how Mathematic-focused Descartes thinking was when creating his rules. His basis for education is simply a geometric proof applied to all knowledge. The Method discussed earlier follows the same rules that mathematicians use for mathematical proofs. All Descartes does is just apply it to concepts outside of mathematics. He applies it to physics and metaphysics, and to all of his thoughts to which it can be applied.

Mathematics derives all of its ideas from certain key axioms (Things which are equal to the same thing are also equal to one another; If equals be added to equals, the wholes are equal; If equals be subtracted from equals, the remainders are equal; etc). These axioms are evident in mathematics. They are basically common-sense truths, or at the very least, basic mathematical truths. As mathematics progressed, it followed Descartes method to a tee. The ancient Greeks did not start mathematics with Calculus or Set Theory. They started with geometry and worked with specific, simple ideas and moved forward from there. As mathematics progressed throughout history this idea of challenging "simple" ideas first and then move toward the more complicated ones became the basis of mathematics. You can see this in the curriculum for mathematics in

grade school as well. You first learn about numbers, then how to add, then to subtract, then multiply, then divide, then what fractions are and their similarities to decimals. After these basic ideas of mathematics are taught, you learn more abstract mathematics with Algebra, Geometry, Trigonometry, and finally Calculus. The idea behind this is simple: start with truths and simple ideas, challenge more complex problems and constantly review.

This makes the use of reason the main distinction between Plato and Descartes philosophy. Descartes actually sees reason as a tool for education. He believes that the only things that should be examined are the things that we can prove and the only way to prove that something is true is to use Descartes' method. The function of reason is "to examine and consider without passion the value of all the perfections, both of the body and of the soul, which can be acquired by our conduct" (Descartes as Sage, pg. 289). Reason is the gatekeeper of whether or not a subject is good to study. It is the tester. If the subject doesn't make rational sense, then it should not be taught. Plato, on the other hand, argued that reason was the goal of education instead of a tool. Plato did not believe in practical applications of reason. He was more suspicious of the practical applications than Descartes. Descartes, however, had no issue with the practical applications of reason.

This makes the sciences an important part of Descartes education, which is another distinction between Descartes and Plato. Plato largely sees practical application of reason as a misunderstanding of reason itself. Descartes disagrees. He believes in science and the progression of the subject. He believed that when reason is applied to science (which it later is, through the scientific method), then the subject can conquer nature in more specific ways. This scientific method has progressed science in ways that even Descartes did not expect. This is good because it gives humanity more control over their lives and the world which they live in.

While Descartes's focus on certainty is incredibly important for the sciences, I feel like it can be a hinderance for the humanities. In my experience, the people that I knew who focused on certainty a lot seemed to love sciences like Physics, Chemistry, Biology and Mathematics but they do not seem to care about the Humanities as much. They would discredit subjects that may have truth but weren't certain. Things like myths and religious experiences. Plato seemed to believe that there was truth to be gained from these subjects, but Descartes notion of certainty seems to lead people to believe that this kind of stuff is useless nowadays. I think there is certainty within the humanities, but I believe it never feels as concrete as it does within the sciences.

I think there are truths in nontruths. We can learn a lot as long as we take the time to study them. In a similar way that Plato sees truths in things like myths, I believe there are things we can learn without the subject matter being completely certain. Mythologies, Religious experiences, art and poetry all bring truths to the observer without being completely certain. Sometimes these experiences bring about truths about ourselves and our humanity. I feel that when people disregard areas of knowledge because they cannot be certain about them, they lose out on other avenues of knowledge. This is commonly done with religion and myths, but I think this is also done with subjects like art and poetry. Some people don't like how flexible the interpretations of things may be and want more solid, concrete, certain answers.

Another problem I have had in my experience with Descartes certainty in education is that it will not prepare the mind as much for uncertainty. I will preface that I don't think Descartes would want education to become like it has, but I think generations after him may have accepted his certainty factor and industrialization of the education sector simply made it worse. In my experience, when people have classes where answers are either certain or

uncertain, they tend to start seeing the world this way. Things are either right or wrong. There is no longer a middle ground. Something is either certain or it is false.

I feel like this is, ironically, the main argument that flat earthers and other anti-science groups that sprung up during the pandemic used to ignore science. They constantly say that we cannot be "certain" about the science because of some weak argument that science has changed before so how can you be certain that the current science is the correct science and won't change in the future. These people can't find pure certainty in the sciences and therefore can't believe in them. They can't understand that we really can't be purely certain in anything. The concept of uncertainty was never taught to them. They do not have the problem-solving techniques needed to understand uncertainty. In my experience of high school, most answers were either right or wrong. Very few classes had a middle ground for answers.

Again, I do not think Descartes would endorse this lifestyle. I simply think it is a problem that falls from being taught only about certainty. Not having answers that are 100% certain in classes may be able to alleviate this issue but it may not. Some people may just need to be certain, no matter what. For me, some of the value of the humanities (a subject that most high schools seem to not support as much as the sciences) is an exploration in the uncertain ideas that we all experience. Everyone experiences uncertain ideas in our life, and the humanities has some answers for these uncertainties but also has way more uncertainties.

By simply living, we are forced to ask questions like "Why are we here?", "Is there a God?", "Who am I?" and other deep and profound questions that we all ask ourselves at some time. There are no certain answers for a lot of these questions. There may not even be answers for some of them. Yet, humans have asked these questions for millenniums and will continue to ask them in the future. These questions can't be easily answered by the sciences. These human

questions are not answerable by the works of Newton or Einstein. Yet, the humanities offer many other intellectuals for these questions and many more. If the sciences offer ways for us to understand the world around us, the humanities offer us a way to understand how we perceive the world around us. Both are important for acquiring knowledge, yet the sciences are usually more respected than humanities.

Nonetheless, I think Descartes marks an important change in the Philosophy of education. Using reason as a tool and a critique of the opinionated classroom design of his time are two main achievements of Descartes. Using reason to discover more truths as well as disprove current "truths" is an important change. Descartes died in 1650. After his death, the age of enlightenment begins and there are over 300 years of philosophic change that occurs before our next Philosopher takes the stage. While Plato and Descartes were rationalists believing that our knowledge was derived from reason and reason alone, John Dewey was an empiricist. The only empiricist covered in this paper. He believed our knowledge derived from our own experience. John Dewey specifically applies this to his philosophy of education. Challenging the more authoritarian style of education of his time, Dewey emphasizes the importance of experience in education as well as more democratic approach for the student. For Dewey, there are two important things for education: our experience and democracy.

Dewey

John Dewey was a 20th Century philosopher, psychologist, and education reformer. He is the only one of the 3 philosophers covered here that lived in a modern democracy. Democracy was greatly influential to Dewey's general philosophy, specifically his philosophy of education. In a democratic society, the common goods are fairly distributed among all who participate in it regardless of origin, class, or occupation. These common goods are granted so that the individuals within the democracy are allowed to live freely and improve their lives.

Dewey believed that knowledge and social intelligence are common goods and should be shared by all regardless of origin, class, or occupation. He believed that without proper education, a democracy cannot be sustained. As Dewey notes in his book *Democracy and Education*:

"A society, which is mobile, which is full of channels for the distribution of a change occurring anywhere, must see to it that its members are educated to personal initiative and adaptability. Otherwise, they will be overwhelmed by the changes in which they are caught and whose significance or connections they do not perceive. The result will be a confusion in which a few will appropriate to themselves the results of the blind and externally directed activities of others."

(Dewey, pg. 129)

If those who participate in a democracy cannot properly use the knowledge they learn or do not even learn the tools to think critically, then a democracy will spiral down into an authoritarian society.

Unlike Plato and Descartes, experience is a key concept of Dewey's Philosophy of Education. Descartes was a rationalist and didn't believe that sense experience could bring any

real truths. Plato also had a more rationalist view on knowledge. Both believed rationality alone could bring someone to truth and the good. The two had different methods to gain true knowledge but neither of them relied on experience as much as Dewey. He believes that experience is the gateway between receiving information and truly understanding a subject. Experience is also innately social. Dewey recognized that a child's life and their personal experiences affect how they process information. If the child is unable to relate what they are learning to their own life, then what they learn will not stay with them. If the information is purely abstract then the child will simply forget it or if they remember it, they won't know how to use the information. If one holds information but is unwilling to apply it or cannot apply it for the betterment of others, then the society will be injured.

Dewey believes that education is social because "not only is social life identical with communication, but all communication (and hence all genuine social life) is educative" (Dewey, pg. 9.) Communication with somebody else changes our understandings. If Jack shares his thoughts and attitudes with Jill, and Jill understands Jack and shares her thoughts and world view then, ideally, one, if not both of them, will have their own attitudes changed. This is how communication is supposed to work and this is why Dewey believes it to be identical with social life and education. It requires more than one person to interact, and it involves a change in experience. Education requires communication and communication is a process of sharing one's "experiences till it becomes a common possession" (Dewey, pg. 16). Without it, social life is stagnant and unchanging. Education constantly renews life and changes people. This is because the nature of life is to "strive to continue in being. Since this continuance can be secured only by constant renewals, life is a self-renewing process. What nutrition and reproduction are to

physiological life, education is to social life. This education consists primarily in transmission through communication." (Dewey, pg. 12).

Due to the nature of education being inherently social, it is not a far step for Dewey to conclude that education is related to democracy. After all, in a democracy there are many different shared common interests. People of different upbringings and beliefs converse together under common interests such as "How to make us better" or "How to help each other". People are also freer in a democracy than other forms of government. This freedom allows for more communication which then allows for more renewal in social life. Dewey believes that because of these two factors, Democracies are best suited for education, rather than other forms of governments, since the goal of both Democracy and education are to make progress, with some readjustment here or there, which will result in a better and fuller life for citizens. This is also why many democratic communities have an interest in systemic education. After all, "a government resting upon popular suffrage cannot be successful unless those who elect and who obey their governors are educated" (Dewey, pg. 128).

Education plays a role in determining whether or not the citizens are rational enough to understand what they are voting on. So not only does the education need to be good enough to make one rational in the Platonic and Cartesian sense, but it also needs to allow for the citizens of the republic to apply their reason in a way that would secure a democracy. If education is not treated as a common good that everyone has access too, then the democracy is more at risk of collapsing into an authoritarian society. If large groups of the population are denied education, or more importantly *good* education, they may be more susceptible to voting for the wrong causes because they lack full understanding of the problem being voted on.

In a democracy, majority rules. If the majority doesn't understand the problem being voted on, then that problem may never get fixed, which does not improve society. An example of this could be the discrimination of African Americans, Women, and/ or LGBT and Queer folks. All of these groups have experienced some form of discrimination in the U.S. historically and that discrimination continues to this day. Yet, many people have voted against policies to try to minimize this discrimination because of a lack of understanding of how social factors play a part in discrimination. The average school curriculum also does not usually acknowledge the social factors so people who aren't taught about the social factors behind discrimination tend to not understand how social factors play this role.

When I think back to my high school education, I never really had a lot of conversations about racism and even less about other minority groups who are oppressed like the LGBT. Racism was taught as if it was "over". Allegedly, the country fixed racism in the 60's with the Civil Rights Act of 1964. Then, everyone else moved on except a few die-hard racists. We were taught that "those who are complaining now are just trying to get power or are playing the victim." Or we were not taught anything about this at all. I eventually learned I was wrong through years of slowly sifting through ideas about racism and discrimination that I learned in college classes, the internet, and my own personal interests. I learned that most Historians, Social Scientists, Philosophers, etc today tend to recognize that there is still discrimination, and they largely cite social factors to prove this. Sometimes when I talk to people about racism and discrimination, I can see they share the way I used to understand racism and I can appreciate how hard it was to overcome that perspective. They have a hard time recognizing other factors that are at play. They don't understand how there could still be racism because at the end of the day, they do not think they're racists or supporters of the Ku Klux Klan. Yet, in a democracy, these

people's vote have the same value as mine. So, it is important that they understand racism and discrimination of other minority groups in the way I later learned to understand it so that they stop voting for policies that harm minority groups. It is important that they have access to as much information that is available, as well as the means to critically evaluate it.

Dewey believes in a deeper understanding of democracy than simply voting on specific issues. In chapter VII of *Democracy and Education*, he states:

"A democracy is more than a form of government; it is primarily a mode of associated living, of conjoint communicated experience. The extension in space of the number of individuals who participate in an interest so that each has to refer his own action to that of others, and to consider the action of others to give point and direction to his own, is equivalent to the breaking down of those barriers of class, race, and national territory which kept men from perceiving the full import of their activity. These more numerous and more varied points of contact denote a greater diversity of stimuli to which an individual has to respond; they consequently put a premium on variation in his action. They secure a liberation of powers which remain suppressed as long as the incitations to action are partial, as they must be in a group which in its exclusiveness shuts out many interests."

(Dewey, pg. 93)

In a democracy, diverse ideas and experiences should be shared to create more points of discussion and interests that push the society forward. Without this a society becomes stagnant and unchanging. Dewey wants society to continue to progress and he believes democracy and a diversification of ideas and experience is one of the best ways to do this.

The point of education, in Dewey's eyes, is to transform society, and improve it. The only way this can happen is if education is treated as a common good that is shared. He agreed with Descartes' Method and its application to education and science. He therefore believed in reason as a tool to determine validity, and also did not want unproven ideas to be taught. Dewey also saw a *moral* worth to education. His approach is broader than Plato and Descartes' reasoning, as they believed more in the prospect of the individual developing a relation between oneself and the concepts presented by proper teachers. Dewey believed that education is more social and will only work once the student finds and understands the subjects in a way that correlates to his/her personal experience in a similar way in which communication works, enriching the lives of those who participate in it.

Dewey believed that the role of the teacher was to guide the student through the subject matter by being able to "read between the lines" of the subject matter they are teaching. Usually, the information between the lines is not taught. These are the little connections to other subjects or the world we live in that bring wisdom. Dewey believed that if the teacher focused on relating the subject matter to the student's experience, then they could guide the student wherever they need to. If the student is engaged, then they will have an easier time learning the subject matter and will get more from it. Dewey believed that the child was the most important part of any educational process. If academia is not focused on the student, then it will fail to properly teach the subject matter that needs to be taught.

Dewey actually encouraged the child to be more involved in his/her education process. He viewed the students as individuals and wanted them to take control of their learning process. He recommended giving children the choice of what classes they wanted to take. This helps the children become more involved with what they are learning. The student chose that class, so

he/she probably had some interest in it. In my experience, these classes are usually most people's favorite classes because these are the classes with subjects that they are interested in. In *Democracy and Education*, Dewey uses an analogy of a horse and the rider to illustrate how the current model of education does not benefit the child due to the child not being a part of the process. As he says,

"A clue may be found in the fact that the horse does not really share in the social use to which his action is put. Some one else uses the horse to secure a result which is advantageous by making it advantageous to the horse to perform the act - he gets food, etc. But the horse, presumably, does not get any new interest. He remains interested in food, not in the service he is rendering. He is not a partner in a shared activity. Were he to become a copartner, he would, in engaging in the conjoint activity, have the same interest in its accomplishment which others have. He would share their ideas and emotions." (Dewey, pg. 16-17)

The horse is only replicating the act just to get food. The horse is not being developed in any way beyond a tool. If children are not brought into the process of education as copartners, they too will only be replicating the act to get their prize (passing the class, getting the degree, getting the job later down the road, etc). The child is not growing as a person but is simply mastering the skill that they need for a job.

Mastery of technical skills is not enough for Dewey. He does not believe that this will "reproduce the life of the group" which is an important factor of education for him. (Dewey, pg. 5) As Dewey states:

"The chief opportunity for science is the discovery of the relations of a man to his work--including his relations to others who take part -- which will enlist his

intelligent interest in what he is doing. Efficiency in production often demands division of labor. But it is reduced to a mechanical routine unless workers see the technical, intellectual, and social relationships involved in what they do, and engage in their work because of the motivation furnished by such perceptions. The tendency to reduce such things as efficiency of activity and scientific management to purely technical externals is evidence of the one-sided stimulation of thought given to those in control of industry -- those who supply its aims. Because of their lack of all-round and well-balanced social interest, there is not sufficient stimulus for attention to the human factors and relationships in industry. Intelligence is narrowed to the factors concerned with technical production and marketing of goods. No doubt, a very acute and intense intelligence in these narrow lines can be developed, but the failure to take into account the significant social factors means none the less an absence of mind, and a corresponding distortion of emotional life." (Dewey, pg. 91)

Due to the industrial nature of the modern workforce, training in efficiency is often desired. But this desire for efficiency can often skew the focus of education to the more technical side. Thus, there is a focus on the mastery of technical skills rather than the social aspects of the ideas. This often leaves the students at loss of the human factors in life, which are arguably the more important parts.

I think you can feel this disdain for the mastery of technical skills when you talk with somebody who hated mathematics in high school. When you talk to these people, they always talk about how useless it is. How they are never going to use it and how it never made sense to them. They feel that mathematics is just sets of rules and equations that can move numbers

around. They probably passed the class by learning the "process" of math rather than the ideas themselves. I like to joke that I never learned mathematics until I learned Physics because before I learned Physics, I never understood how to *use* mathematics. I simply knew when and where to plug in the numbers and variables. I was a pretty good calculator, but I didn't understand mathematics.

This is what Dewey is talking about. Education is more than simply learning to do things, it is much more than that. Education's goal should be aimed to shape the individual into the person they want to be. Learning to plug in numbers and variables does not shape you in any way. If you ask any mathematician why they became a mathematician, they tend to speak more about the deeper ideas of mathematics that they related to and found interesting in a deep and sometimes personal way. Mathematicians do not become professional plug and chuggers. They dive deep into mathematics because it relates to their way of thinking and their interests. The "bare necessities of subsistence will not suffice to reproduce the life of the group." (Dewey, pg. 5)

I think this is the biggest disappointment of my high school education. I feel that I don't really understand a lot of what was taught to me. I remember a lot of things, but I don't understand them. I passed many tests by writing the correct definition or putting in the correct date but all other information regarding the topics I simply wasn't given (later I found out this information was largely more social and sometimes political in nature). In fact, the classes that I felt I learned the most from were willing to give this information together with the subject matter even if most teachers, and sometimes parents, did not want this provided. In high school, I learned to master certain skills, but I never reproduced any life of any group.

When I first entered college, I came in as an engineer. I was the product of a very common sentiment that was "If you're good at math, then you should be an engineer". I followed this dictum through a few years of Pre-Engineering in high school and then I started college with a double major in Aerospace and Mechanical Engineering. But I eventually left engineering because I felt I wasn't really learning anything. I remember most of the other engineers not being that interested in the deeper concepts we were learning in Physics, Chemistry, and Mathematics. Many of them just wanted to learn the shortcut that would help pass the class. They weren't interested in why things occurred because all that was needed to pass the class was how it occurred. These people had the same skills I had. We could all solve first-year math and physics problems relatively easily, but they had no interest in delving any further. I did, which is what eventually led me to get a Physics degree instead of an Engineering degree. But that attitude, which was basically my entire attitude in high school, has stuck with me since.

With the exception of a few classes, I behaved like those engineers in most of my high school classes. If I never got a reason to listen, I normally didn't. I had the same attitude of how to pass the class rather than with the meaning of what was being learned. I think is a pretty normal mindset especially in high school in Oklahoma, which is a state with notoriously low education scores. I don't blame the engineers in my college classes for acting like that, but it is unfortunate that engineers would be so indifferent to learning physics, chemistry, and mathematics. What I eventually found out with my high school classes, was that once I had a teacher that could grasp my attention, I was capable of learning anything.

The main focus in High School was to pass the test. Whether it was the week test, unit test, End of Instruction Exam, or AP test, most classes in High school revolved around passing exams. Some teachers spent more time teaching how to test rather than the material on the tests

themselves. The problem with this is that the stuff that Dewey cares about can't be tested. It is easy to test skills because you either learned them or you didn't. How can the board of education of a High School test whether or not a child is becoming the person they want to be? It isn't possible. So, the board of education tests technical skill. But since these test scores determine merit and funding for the school, they become more important than anything and the school focuses on raising test scores. This focus means that some teachers focus all of their attention to raising test scores or teaching students how to test well. But the teachers that really have an impact are the ones that actively try to bring the subjects into the student's experience.

I had a really good Physics teacher in high school who really helped me understand Mathematics and Physics. I also had an English teacher who really helped me learn to read between the lines and see themes and philosophies in books and media. One of the interesting things about these two teachers is how non-test focused, they were. The Physics teacher indicated that a condition for learning physics was to fail first. He built in a redo quiz into all quiz scores so that the students didn't have to worry about the grade. All they had to focus on was the subject material. All redo quizzes were done in groups so that those who understood certain problems could explain it to their peers because this teacher believed that the best way to learn a subject was to teach it. The English teacher never had any tests, with the exception of vocabulary quizzes, only the occasional essay which would be about certain key topics. Both of these teachers put grades and tests on the backburner so that they could focus on relaying the material to their students and in the end, this made these classes some of the best in my High School experience.

But until I had these teachers, I was just learning skills. I was just doing what need to be done to pass the class. I had no insight into anything and therefore really knew nothing, which

seems to be the default of the educational system I went through. You are taught skills unless you get lucky and have a teacher who is willing to delve deeper into the subjects then you may get to experience to subject to its fullest potential. Once you get that potential though, I feel that drive to delve deeper can stick with you for a long time.

I believe that this is what Dewey is talking about when he means that the teacher must be able to relate the student's experience to the subject in order for the student to learn it. Both my Physics and English teacher put grades on the back burner in order to help students focus more on the actual subject. They let us have the time to explore the subject and, more importantly, fail at it. We were given safe opportunities to fail at these subjects and learn from our mistakes without harming our grade. Being able to explore the subject allowed for me to really sink my teeth into it and relate it to things I already knew. I still remember a lot of the information that I learned from my Physics and English classes while other classes I have forgotten a lot of it.

I do understand that John Dewey's Philosophy of education is hard to do, in the practical sense. It can be hard to relate the subject matter to students who either largely outnumber the teacher or simply are not in the place to learn the material yet. Class sizes seem to only get larger, and teacher's salaries seem to get smaller every year. But I still feel that relating the student's experiences to the subject matter is the best way for the student to truly understand it. When I just learned to pass the test, I usually start forgetting the material as soon as the last test is completed. Every time my experiences were related to the subject matter, I feel like I have left the class feeling like I actually got something out of it. These classes are usually the ones I can pin point as changes in my life that helped shape how I am today.

Conclusion

The Philosophy of Education is a complicated issue. I feel that I only represented a small portion of the problems that are associated with the Philosophy of Education. Yet, it is an important conversation. The philosophies of Plato, Descartes, and Dewey each hold key parts of this conversation. I believe that Plato's three distinct ideas are still important start for the philosophy of education. Those ideas were:

- (1) There is a multiplicity of truths that should be learned through a system of education with different ways to learn them.
- (2) Reason is the goal of education instead of the common notion that reason is a tool for education.
- (3) There is a moral worth to education.

While Descartes did correct statement (2), emphasizing the importance of certainty and critiquing opinionated classrooms, I think statements (1) and (3) hold value to this day. I do believe that there are different kinds of truths that can be learned, and they will not be learned in the same way. As mentioned in the Plato chapter, myths and religious experiences contain truths about ourselves and our humanity that can only really be taught through learning the myths and/or having the religious experience. If we do not consider these experiences as having some sort of truth to them then we limit our potential knowledge.

The same argument can be used for the humanities and the sciences in High School. The more High Schools promote STEM programs but refuse to support their humanities programs then the more they limit the potential of their students. Not only will their potential be limited but, in my experience, STEM focused programs tend to be very industrial in nature. That is their

focus is more on the acquisition of skills rather than the acquiring of knowledge. If students are trained to learn skills rather than acquire knowledge in high school, then they will not "reproduce the life of the group" which is an important factor of education for Dewey. (Dewey, pg. 5) In order to properly reproduce this "life of the group", teachers need to relate the subject matter to the student's experience. This is difficult in the current state of education in the United States, where Teachers are considered "babysitters" and classes are overpacked.

Plato, Descartes, and Dewey each expanded on the definition of good education in their own way. While all three believed education was important, they all had different ways to approach good education. The rationalists, Plato and Descartes, believed that knowledge could only come from reason and not from one's experience. Dewey, an empiricist, disagreed with this notion. He believed that our experience was the reason we were able to learn anything. If we never learned to relate our experience to the subject matter, then we would never truly learn it. I think is an important part of education. Dewey's model is a good representation of my experience with education.

When I first started this paper, I was trying to figure out how people could or could not learn certain subjects. It was a curiosity at first. Why did I learn something in high school, but they did not? And vice versa. Yet, after 2 years in a pandemic where race riots, attacks on the U.S. capital, and constant disregard for current scientific thought by the general public all occurred, I am now worried about the state of education. When John Dewey said that a democracy without proper education will result in a state where a "few will appropriate to themselves the results of the blind and externally directed activities of others" (Dewey, pg. 129), I felt the urgency in this statement. Education has always been an important conversation throughout history, and it should always be. Yet, when I look back at my education, I feel that

the majority of classes were not beneficial, and I was the "good" student. I hope that the current system of education changes in the future. I agree with Dewey that a good democracy must have a good education and I personally do not believe that our public school system was a "good" education.

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