Theory of Knowledge Essay

TOK Prompt:

**“Without application in the world, the value of knowledge is greatly diminished.” Consider this claim with respect to two areas of knowledge.**

**Daniel Navea**

**002136-0098**

May 2016

**Word count**: 1594

Knowledge has been actively chased and cherished by humans for thousands of years, for we as a species place an embedded value in knowledge. This knowledge has its two different roles; knowledge that is directly applicable to the real world, and then there is knowledge that may only reside in the thoughts of man, purely theoretical without application in our physical world. This raises the question of to what extent does the lack of knowledge application hold its value, if any. I find the statement, “Without application in the world, the value of knowledge is greatly diminished”, to be an accurate representation of most knowledge, especially in regards to areas of knowledge such as mathematics and natural sciences. Though, the assertion may be too all encompassing and ignorant of the various situations in which non-application of knowledge holds its own unique value. While there is an array of examples where non-applicable knowledge proves to be useful, the broad and all encompassing statement that *all* knowledge without application is greatly diminished is simply unsubstantiated and absolute, and it is man what assigns value in whatever form felt necessary of knowledge. Mathematics and its application have been imperative to the progression and evolution of mankind through uses of its technologies. Though, not all math is directly applicable to the real world, and may be useful as forming the foundation for other areas to grow in its real world worth. Natural sciences strongly depend on the application of said knowledge, for without, the spread and advancement of science and mankind would remain stagnant. Similarly non-applicable sciences prove valuable to individuals whom assign it through various means such as astrology.

In natural sciences, the application and spread of knowledge is imperative the progression of knowledge and mankind alike; establishing its immense value. It is through the application of knowledge that everything we have today is here. Thousands of years ago, early Homo sapiens discovered that they could create for with wood and other such flammable items found in their surroundings. This knowledge led to starting fires to keep warm during winter, cooking food to prevent harmful bacteria from harming themselves, and a whole domino effect of innovations. Had they kept that knowledge to themselves, without applying it, what value would it be to them? Today, science is applicable in nearly aspect of our lives, again a responsible factor for everything we have. It helps us create new things, new innovations, and the ability to approach problems in a new way. In my physics class, we covered various scientific problem, ideas and concepts, one of which being thermal conductivity. The way temperature may feel through aluminum versus a paper book for instance. I learned how the metal was a better thermal conductor, and could pass temperature and dissipate it quickly, which is why when a book and a piece of metal are the same temperature, the metal will *feel* as if it is cooler. I had gained this knowledge, and applied it to my own experiences. When I was out at a restaurant, I had received my milkshake in a metal cup rather than a glass one, due to the fact they had ran out of clean glass cups. My girlfriend right next to me had received hers in a glass cup. I had recalled my knowledge of thermal conductivity, and told her that my milkshake would melt far faster than hers. We waited shortly and my milkshake had indeed begun to melt more quickly than hers. If I wasn’t going to show her this property of temperature and thermal dissipation, I could have used this knowledge to eat the milkshake more quickly. It is through this application of knowledge I had that I am able to better understand the things around me, far improving the personal value of knowledge rather than something I know yet will never have any personal effect on my own life.

A counterclaim to the assertion that only applicable science holds value is that plenty of non-applicable science we ourselves are able to assign value, impacting one's life it its own form rather than I directly physical matter. Value is subjective, and is found by one's own self or as a collective. I can tell myself that I find this piece of rock to be extremely valuable, or I can say that it is worthless. Either way, it is of my own opinion. There more people that agree with me, the more powerful it become. Nevertheless, value is subjective. Astrology is an excellent example of pseudo science that shows no real application of said “knowledge” yet has impacted many lives, with millions of people finding strong value in this pseudo-science. Astrology is a type of pseudo science that dictates the certain personality traits are dictated by the position of the starts when you are born. I personally have no belief in such practices, yet do have friends that strongly believe in astrology, and refer to it and its “accuracy”. Astrology being a pseudo science has no scientific basis to backup such claims, and is unacceptable in the scientific community. Yet there are those, such as my friends that stand by it. Their reasons may vary, but all commonly do they all find value in it. They see themselves in such predictions, and such does affect and change their behavior and personality traits by such beliefs. This knowledge takes an impact on lives, and impact cherished and held valuable by millions of people.

Much like natural sciences, the application of mathematics is omnipresent in our world, proven useful in aspects such as computers, algorithms, and even the most basic concepts such as counting the amount of fingers you have. Mathematics has been essential in the progression of mankind, even before the first math books or principles wherever written. From the simplest of math such as addition, to the complexities of calculus and geometry, math is everywhere, and for without it mankind would be nothing. Math is true, a concept derived from proof and evidence, with endless applications to our world. Its this application that takes direct effect on our lives, holding the most valuable of knowledge. Math affects every single person, everyone who can count, and this application of knowledge has exponentially affected our understanding of the world around us. Applied mathematics is what’s used to model and solve the very problems present in the real world. The nature around us is filled with numbers, and can described and explained by mathematics. With the entire math I have learned in my lifetime, it has affected my just as greatly as anyone else in even its most rudimentary applications. Applied mathematics is the reason I can count the amount of change I should receive from or purchase, or the reason I can function in this world at all. It doesn’t need a direct acknowledgement that math is being used to solve such a problem such as knowing that when 10 questions on a test is twice as much as the test with 5 questions. Math is second nature in many instances, and it is these real world applications that hold the true great value for all the great things they enable us to accomplish.

While knowledge in applied mathematics certainly holds its immense value, it is not to say that non-applied math should hold none. Non-applied math may not have direct and implicit effects on the real world and thereby mankind, but it is the type of math that serves more as a foundation for more complex mathematics, and can lead to further understandings of the world around us. For example, a Greek mathematician named Apollonius of Perga in c263 had written 8 volumes explicitly about the mathematics of ellipses. He had found these discovering and mathematics and profound and incredibly interesting, yet the knowledge he gained was useless, unable to be applied to the surrounding world. His pursuit of math and knowledge needed not sensible justification. Yet, after two thousand years, astronomer Johannes Kepler had discovered planets orbits of planets were elliptical rather than circular. After all this time, Apollonius’ work that would once be considered useless and a simple interest transformed into something of practical value to the scientific community. What may seem to be useless in its non-applicable nature may turn out to affect the very world around us.

It is important that we acknowledge and discuss the matter and importance of applied and unapplied knowledge because these are the things that make up our world, knowledge. Whether it is the complex mathematics that allowed the San Francisco Bay Bridge to stand, or the primitive mathematics considered irrelevant that such complexities would not exist without, knowledge is everything. It's easy to understand this thinking, it is the physical world that seems to most directly affect us.

Knowledge, whether it be in its real world applied form, or its non-applied form, its influence and power in our world in both forms is prevalent. “Without application in the world, the value of knowledge is greatly diminished”, shows to be ignorant of the usefulness of non-applied knowledge. Applied knowledge in the world clearly shows its value, and is clearly responsible for the progression of mankind and everything we have as clearly evidenced by mathematics and human sciences. Though, when you look a little further, you can see that beneath those applied mathematics and sciences, there is the unspoken and unapplied math and sciences that lead to the greatness and prevalence of the world today, and hold its own unique value just as applied knowledge does.