Tutopiya IB Theory of Knowledge Sample Essay

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"There are only two ways in which humankind can produce knowledge: through passive observation or through active experiment." To what extent do you agree with this statement?

What is knowledge? Oxford Dictionary states that 'Knowledge is facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject' (Oxforddictionaries.com, 2014).

From this definition we can clearly relate that knowledge is produced through active experimentation as well as passive observation both of which humankind can for example 'acquire through experience' and hence we can refer to both these terms for producing knowledge.

Furthermore, passive learning is when the learner is inert to the knowledge surrounding them and has no power nor control over the knowledge that revolves around them which has already been produced, whilst active learning is when the learner questions the world surrounding them, to seek the knowledge needed or required.

Experimentation is 'a scientific procedure undertaken to make a discovery, test a hypothesis, or demonstrate a known fact.' Whilst, observation is the 'action or process of closely observing or monitoring something' (Oxforddictionaries.com, 2014). This essay will examine emotion, memory, reason and sense perception as ways of knowing and History, Arts, Mathematics and the Sciences within the area of knowledge to prove the extent in which humankind can produce knowledge through not only passive observation or active experiment but other forms as well.

My argument is that there's more to producing knowledge than through passive observation or active experimentation, though they do play a fundamental role to the production of knowledge from humankind, I believe that there are other means in which humankind can produce knowledge other than passive observation or active experimentation.

Taking a look at the Sciences through time (from a historical development till now) for example, the production of knowledge in scientific theories comes mainly from experimentation as well as observation. For instance, scientific investigations usually begin with an observation that points to an interesting question and leads on to carry an experiment to prove the hypothesis. One famous example and real-life situation we will be examining is of an observation that led to further investigation was made by Scottish biologist Alexander Fleming in the 1920's. After an absence from his lab, he returned and began to clean Petri dishes on which he had been growing a certain kind of bacteria. He noticed a peculiar thing: one of the dishes had become contaminated by mould and the area around the mould looked free of bacterial growth. Fleming's observation led to a series of scientific tests that resulted in new knowledge: Penicillin could be used to treat bacterial infections.

Also, looking at another scientific theory; the theory of evolution, knowledge came from observation. For example, Darwin's idea was influenced when on an expedition; he proposed the theory of evolution occurring by the process of natural selection. The animals (or plants) best suited to their environment are more likely to survive and reproduce, passing on the characteristics which helped them survive to their offspring. Darwin's theory came purely from his brain through reasoning to establish the knowledge produced.

We will also consider the difference between gaining knowledge in the natural sciences and gaining knowledge in other areas of enquiry such as sociology or history. In the natural sciences we talk about forming hypotheses and testing them by experiment as mentioned above, so we raise questions about experimental methodology and scientific knowledge. The ideal in natural science is the repeatable testing of a hypothesis through experimentation. In other areas, enquiry such as those cannot be inspected in a laboratory. For example, in the study of history, where evidence is so often fragmentary and ambiguous, different techniques of enquiry have to have been applied.

For example, we have a knowledge claim from philosopher Confucius, 'by three methods we may learn wisdom: First, by reflection, Second, by imitation, and third by experience.' Here, he claims how 'imitation' (which can also be seen as a form of observation), as copying what's being put out (for instance in a science experiment) is the same as observing and carrying out the experiment. Also, 'experimentation' is one of the major forms of producing knowledge however, Confucius also states 'reflection' as being another. For example, reflecting back on tests and exams is a common element in a student's life, helping us produce knowledge and develop on it from incorrect answers, reflecting also stays embedded in our memory, allowing us to attain and question the new knowledge discovered. Reflective thinking means being dedicated to seeking out self-knowledge about one's practice. It means making a plan and taking the time to think about what we do, why we do these things, how things worked out, what we learned, and what we should change. It helps to confirm or challenge our own knowledge and skills.

Artistic expression such as music also creates knowledge in some listeners, some artists for example Eminem bring forward their life struggles and stories, whilst some songs have messages to raise awareness for certain problems occurring worldwide.

Furthermore, as we continue looking at history as an area of knowledge, we will look at Karl Marx's Theory which was that the rich get richer, and the poor get poorer. For example, in India the congress party ruled the nations for years and the result at the end was exactly what Karl Marx had predicted: the rural area population got poorer, and the urban citizens became richer. How did he attain this theory? Reflection could be the source of knowledge. Marx could have looked back upon countries before to attain this theory, he reflected on past accomplishments and failures as an intuitive, even instinctive process, and reasoned based on that. We almost assume that because we are thinking about something, we are also acting upon the results of that thinking. But thinking about something and adding more ideas is only the start of reflection. Reflection is a systematic process by which reflective thoughts are captured, so that they can be analysed in the future, is the basis for reflection that leads to continuous improvement, hence attaining knowledge.

Another real-life situation is looking at another area of knowledge which can be looked at is Mathematics, in calculus for example it is one thing to learn the formula (which comes through passive observation) but another thing is to know how to apply that formula (which is produced through active experimentation) to enhance our knowledge. In this circumstance observation and experimentation is an essential form to attaining knowledge.

In addition, we have an article which demonstrates passive learning, from Huffington Post 'Violence on TV and how it can affect your children'. Studies show that violence on television does have an adverse effect on children and the way they think and act, but some recent studies indicate that watching violence on television can even impact adults. We know that children learn from experience or role modelling. Therefore, when children see violence

on TV, they have a difficult time differentiating between what's real and fictional and hence tend to imitate what they observe. This then creates a chemical change in the brain, as if enough violence is viewed the brain reacts as if the person viewing is being abused. Children are psychologically affected by having less empathy, and hence with more TV violence, they are more likely to use aggressive strategies to solve problems. Children hence tend to be more reactive than proactive to solve frustrations.

Humans can also use computers to learn by identifying patterns that our senses are too slow to interpret. Deductive reasoning can uncover truths that don't require experimentation to deduce new knowledge. "Animals have knowledge. But only men can reason." The process by which we reason is known as logic. Logic teaches us how to derive a previously unknown truth from the facts already at hand. Logic teaches us how to be sure whether what we think is true is really true as it's the avenue for intellectual truth.

To conclude, I do believe that humankind can produce knowledge through passive observation and active experimentation however there are also other ways in which knowledge can be obtained for example, reasoning or reflection.