Exhibition Final Draft

How important are material tools in the production or acquisition of knowledge?

Theme: Knowledge and technology

The extent at which material tools are important for the acquisition of knowledge depends on its specific use and aim. This is because they could be considered either crucial, helpful or hurtful for the construction of explanations and acquisition of knowledge as a whole.

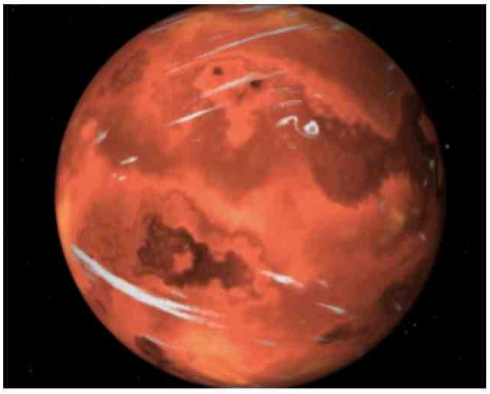
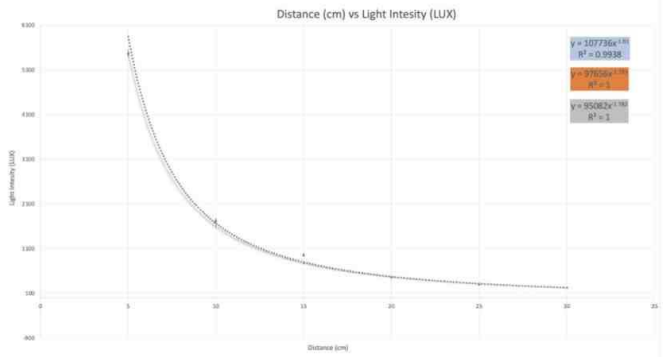


Image retrieved from: ("Mission overview", 2021)

This first object, the K2-3d is a super Earth exoplanet, potentially rocky, which orbits the M-type star, its mass is 2.8 Earths, and it takes 44.6 days to complete one orbit of its star. This planet was discovered in the year of 2015 by the K2 Kepler telescope (a space telescope designed by NASA to survey a portion of the milky way in search of exoplanets) and its detection method was through transit. The discovery and further research on this planet is of great significance now that there's a possibility that it may harbour extraterrestrial life. It is important to mention that without the use of the K2 Kepler telescope the existence of this planet would be unknown

This object connects to the question because without the Telescope, the specific and detailed knowledge of the K2-3d, (its dimensions, characteristics and potential) could not have been obtained. It is impossible for the human eye to acquire this knowledge by itself, and therefore the only way in which we can explain the existence of this planet is through the K2 Kepler telescope, now that its ensemble and properties allow this. Therefore, the use of this material tool plays an important role in the acquisition of knowledge about this specific planet now that without it our understanding of this same one would be null.

Under this circumstance, when humans can't manually acquire specific knowledge due to their normal limitations, the use of material tools is crucial and indispensable in order for this knowledge to be acquired and explained. Additionally, said material tools enhance and widen our knowledge spectrum. Therefore, material tools are significantly important, now that we need to completely rely on them to expand our understanding of reality.



In another perspective, this screenshot of a graph shows the relationship between distance and light intensity, this is the product of an experiment that I conducted in order to comprehend the inverse square law of light for my physics class in january 2021. Through this graph created with the program Microsoft Excel, I was able to build a trend line that associated the values and as well calculate an equation that describes this movement. Through the use of this graphical tool, I was able to communicate my findings, compare my results with what the theory stated in regards to these two variables and finally demonstrate my comprehension of the subject in matter.

This object connects to the question because through the program Excel, I was able to construct a graphical model that allowed me to communicate and explain my findings in regards to the relationship between light intensity and distance, and at the same time it facilitated others - more specifically the teacher - to understand and fully comprehend my work. Nonetheless, this graphical model could have been developed by hand or other mediums, meaning that the material tool is helpful and allows a better transmission and faster acquisition of knowledge. Therefore, excel is a material tool that facilitates the acquisition and explanation of knowledge, however it isn't crucial or significantly important.

Under this circumstance, humans have the ability to produce knowledge without the use of material tools, however these technologies are important when allowing individuals to communicate more efficiently, and create a greater accessibility for the explanation and acquisition of knowledge. Therefore, material tools serve as a mechanism by which individuals can transmit and communicate their understandings more efficiently.

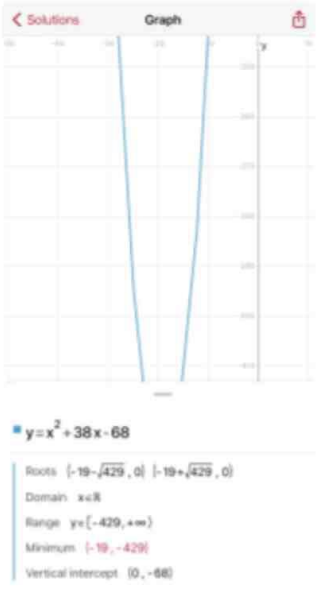


Image retrieved from:("Photomath - Scan. Solve. Learn.", 2021)

Finally, the image to the left shows the solution for a mathematical procedure, more specifically a quadratic equation, one which I had to solve by my own means in a mathematics homework in grade ninth. I personally struggled with the process of coming up with the solution for this equation, and therefore asked a friend for help. However instead of guiding me through the process, she decided to show me an application named PhotoMath in which individuals can either type or take a photograph of a mathematical problem and it provides the solution for the problem. Therefore, she suggested that I used this app to solve the equation, however this didn't provide the steps or process by which the answer is reached and instead of learning and acquiring knowledge this would negatively affect my learning process.

This object connects to the question because it indicates that the use of material tools such as the application PhotoMath, instead of contributing or being vitally important to the acquisition of

knowledge - as seen with the previous examples - it jeopardises and hurts it. This is because it allows individuals, especially students, to know the answer to a mathematical problem without knowing or being able to explain the process by which this is obtained. Therefore, if I had followed the suggestions from my friend, instead of comprehending the problem and mathematical analysis and interpretation thoroughly, I would have lost a learning opportunity that is significantly important for my formation as a student.

Under this circumstance, the use of material tools can negatively affect the acquisition of knowledge now that it is used as a shortcut to develop solutions and this way it hurts and jeopardizes the process of learning and gaining significant and relevant knowledge. The use of these material tools deprives its users from a complete explanation of knowledge instead of serving as a mechanism to transmit and communicate it in a clearer way, which is why these material tools damage the acquisition and understanding of knowledge and are unimportant to the process.

References:

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