



What is The Best Way of Learning Science?

71. Sinon



Amos Mgonellah, Sophia Abdallah and Happyness Silvester

Introduction:

Researches show that practical in science subjects are not just to motivate and give fun but they also enable students to apply and extend their knowledge and understanding science in novel investigative situations which can stimulate interest and aid learning and knowledge retention (Millar R, 2009)

AIM: To investigate the importance of practical work in learning science subject

Practicals in science subjects are not just to motivate and give fun but they also enable students to extend their knowledge and understanding science in novel investigative situation which can stimulate interest aid learning and knowledge retention. Crucially practical work gives students an understanding of how scientific knowledge is generated by experiments and observation, so as they can have deep understanding and be creative. We aim at investigating the importance of practical work in learning science subjects in secondary schools. In the pictures below it shows students learning practically and the other shows students learning theoretically.

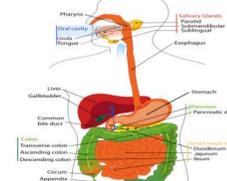
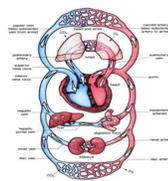
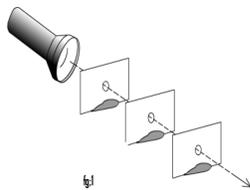


MATERIALS AND METHODS

The sample will be made of ten (10) students, experimental group and ten (10) students control group from Sinon Secondary School. The test result will be the instrument of data collection to be used which will be administered by the researchers in personal. Data analysis will done using descriptive analysis and data presented and described using summary statistics like frequencies, percentage distribution tables, pie charts, and graphs to show the performance of the students in general.

Through the investigations we performed we saw that students had fun and reacted positively through practical means and student got bored when theorizing: The following experiments were carried out **Energy transformation**, Making a sample of **human digestive system**, **blood circulation (fg;2)**, **acid & bases**, **light travelling in a straight line (fg;1)**, **physical and chemical change;**

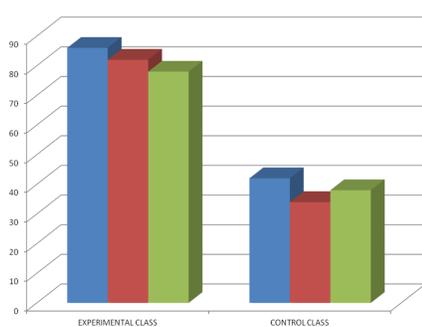
Material to be used in experiments will be as follows: Local materials like plant leaves, milk, lemon, candle, match box, hard board, battery, solder wire & gun, screws mortar, boxes, touch, pulley, colours, polyesters boxes, aluminium plates, empty Kilimanjaro water bottles, in improvising teaching and learning materials. Also laboratories equipments were used to different practical which needs some chemicals and reagents. Manila sheets used for visual displays.



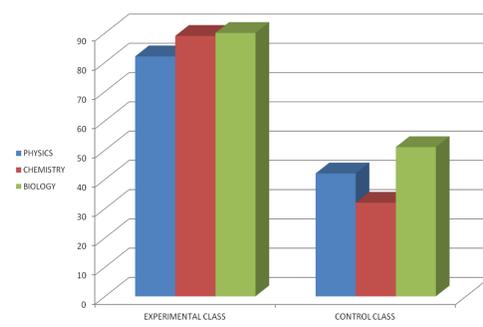
Results:

The experiment worked and data was collected, obviously the results of experimental group were very high and that made us to see importance of learning science subjects practically, Huge number of experimental students got more than 75% , but the results of control group were not perfect because a very high number scored below 41% as their average.

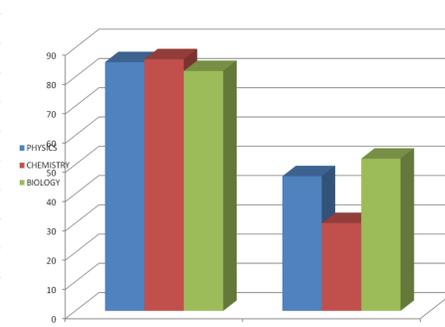
Refer to the statistical average graphs below which shows the average in every subject in both classes and briefly analyzed results in three subjects (Physics, chemistry and Biology).



Test 1



Test 2



Test 3



Conclusions:

The findings and recommendation developed by this project are beneficial to students who read them so as to know the importance of practicals in science for their better future lives. The study findings are also beneficial to teachers who get more knowledge retention and achieve their goals in life and society expectation lastly the project is beneficial to the government of Tanzania especially the ministry of Education and Vocational Training should see the importance of really practicals in learning science subjects because Tanzanian students are very creative and when they are given chances to express their ideas they can do wonders.

Acknowledgements:

The accomplishment of this study of this study would not been achieved without the involvement of several players;

We foremost thank God almighty mho has given us health and strength through the time our project.

We would like to give special thanks to our supervisors Madam Prisca Wambura Mr. Joseph, and Blandel for their tireless, comprehensive, energy encouragement and skillful assistance from the begging to the completion of this work. We are also deeply and proudly grateful to our head mistress Mrs. Maria Munisi for her financial support, and her patience

The process of data collection would not have been successful if we did not have cooperation from various respondents so we convey our appreciations to Mr. D C Kizwalo, Mr Isaack Msamba and Mr.Alex Kajobi for their exhibitory support to accomplish this study as well as our fellow student.

References:

Robbin Millar University of York Heslington, 2009
Justine dillon king's college, 2008

Further information:

Download at: www.youngscientists.co.tz/posters