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LIMITED RESOURCES, UNLIMITED ENTHUSIASM A CASE STUDY OF KENDRIYA VIDYALAYA HARSINGHPURA, KARNAL

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Abstract

*One of the most important features of **INDIA** is the rich and diverse culture and thus at every mile, we could see a shift of lifestyle, beliefs and even mindset and career choices. This Study is first phase of the Research carried out by the investigator to see if by careful and thoughtful inclusion of technology, a mind shift could be achieved in the eager young minds of the Government School **Kendriya Vidyalaya Harsinghpura** , Karnal(H.R). The investigator, as TGT Mathematics used various ICT interventions such as YouTube Video Lectures, Projector Presentations. This report is an attempt to show what a little touch of technology along with the zeal to work hard could do.*

Introduction: Information and communication technologies (ICT) have become one of the fundamental building blocks of modern society. Many countries now regard the mastering of the basic skills and concepts of ICT as an inevitable part of the core of education. To this end, various new models of education are evolving in response to the new opportunities that are becoming available by integrating ICT and in particular Web-based technologies, into the teaching and learning environment. The effective integration of such applications however, depends to a large extent on teacher's familiarity and ability with the IT learning environment. Mathematics teachers need to know exactly how ICT is used as a teaching and learning tool, for their own purposes and to help students to use them. This module is about the integration of ICT as a tool in the Mathematics classroom with the overall aim of increasing the effectiveness of teaching and improving students' learning.

Why this Study?

Mathematics has always been at the forefront of horror to the students and this horror has been on the peak in the rural areas. Lack of Educational facilities and the almost negligible awareness among the parents and guardians have always left the teachers with a lot to do in a stipulated time. With the advent of technology and the initiatives taken up by the Govt of

India, the educational institutions like the higher education institutes for bachelors and masters have been getting exposure to **MOOC**s via **SWAYAM** platform. The investigator has taken up the challenge to incorporate the **MOOC**s into the elementary classrooms in the field of Mathematics and see if the MOOCs would be a good supplement to the traditional classrooms practices, especially in the concepts of **Geometry** and **Mensuration**. This study is to see what role technology can play in making Mathematics both fun and awesome at the same time.

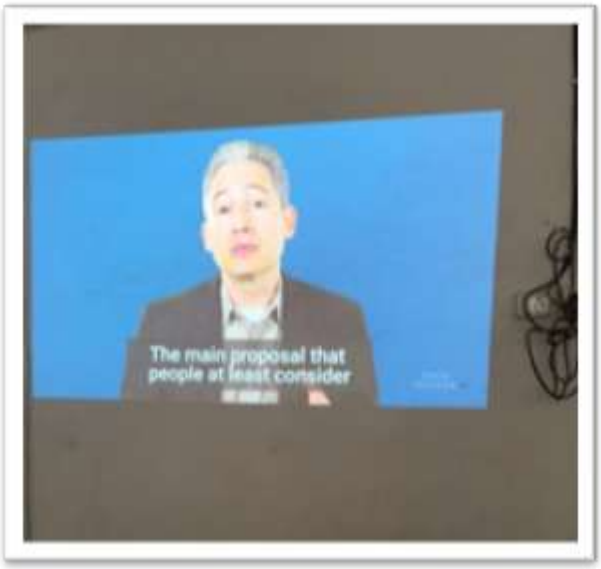
Discussing How Cones are nothing but Rectangles wrapped at some angle ☺

Discussing the centre of Symmetry of objects ☺

Students listening to Prof Brian Greene ‘
s Pre-Recorded Video in which he talked about ‘Why Mathematics is the queen of all Sciences’ ☺

Design of the study

A total of 71 students of Class 7 were selected for the present study. The study was conducted in two phases, from **July 2017** to **September 2017** and **October 2017** to **December** 2017**.** The first phase was dedicated to bridging the gap between the Previous Class concepts and the competencies that the students were required to grasp in order to acquire the concepts in the present class. In order bridge this gap, a student achievement test was conducted which was based upon the Learning Indicators as laid by NCERT, and then on the basis of the performance of the students it was found that they had problems in understanding areas such



as **NUMBER LINE**, **GEOMETRY** especially the **2D** and **3D Visualisation** and due to this they were not able to apply **MENSURATION** formulae too (**Surface Area and Volume**)

An intensive intervention program was then chalked out and then started in the second phase. The program included Traditional teaching method along with the YouTube Video lectures made by the investigator which the students had the option to view at home and were discussed in the classrooms via OHP. A SLATE (Students' Learning Achievement & Teachers' Effectiveness) at regional level was conducted by KVS in the mouth of February 2018; the results were a bit overwhelming for us.

OBSERVATIONS: -The Performance of the students was observed and their marks in both the tests were recorded. The tabular performance of the student is as follows: -

No. Of Students Appeared	No of Students Securing Marks (Out Of 10)							
	< 3	% Change	4-5	% Change	6-8	% Change	9 onwards	% Change
1st Test (SAT)	33	-32.5%	23	+43.47	11	+45.45%	4	+50%
2nd Test (SLAT)	16		33		16		6	

Table 1: Performance of students in the two Achievement Tests

Thus it is evident that after the intervention program a positive change in the achievement of Students have been observed. On the Qualitative or the Conceptual side, the students showed an improvement in the areas of **Integers**, **Construction** and, **Congruency of Triangles.** It would be beneficial for them as in the higher classes up to 10^{th}, the concept of Construction and Congruency of triangles are there in the curriculum which would help them to understand the core heart of the conceptual matter in a better way.

Note: One important thing that the investigator would like to point out that there are certain concepts like congruency of triangle and the concept of parallel line in class 9^{th} and the concept of Pythagorean Theorem in class 8^{th}, the students of the class 7^{th} that were taken in this study showed better understanding of these concept and we are hopeful that they shall be doing very well in the future classes.

Discussion of the result: - The study showed us that although the performance of the students increased significantly get it should not seen as the end of it and now only the real challenge has begun. It is proposed to extend the Study further with more focus on the spatial and cognitive aspects of learning so that it could be ensured that the student's knowledge is not limited to memory based area of the subject concerned.

What the Future holds for us - Although the study has been a morale booster for us and the further phases of it might give us a lot to improve in the coming years; yet there are certain points should be cared for us to ensure that we perform better.

1. **Physical Infrastructure**: - With only a handful of OHP's, Interactive Boards and two full fledged computer labs available, the presence of power supply for only an hour in the day , it is a daunting task to cover all the classes efficiently. Although the matter of electricity is beyond the hands of Vidyalaya still the administration is working really very hard to ensure that proper utilization of the resources to the maximum is achieved.

2. **Socio-Economic Barrier: -** With about 75% of the students coming from the village area, the lack of awareness in the parents and the career choices, aspirations and the morale booster that is to be provided by the family is also lacking to a large extent. The investigator felt this in this study too as feels that it should be countered with full force to ensure that more of the students gets motivated into the field of STEM and hence choose a suitable career path.
3. **Personal Choices: -** The only point that should be dealt first hand in the very beginning and once settled with makes simple initiatives like this a revolution. The investigator feels that personal initiatives are a must when dealing with the situations that the Vidyalaya is present in because the very foundation of teaching is on "**GIVING SOMETHING BACK TO SOCIETY".** The centrally funded schools like KVs have always been at the forefront of innovations and exemplary hard work with the society and the investigator feels that the present KV would be able to transform a lot of lives in the future too.

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