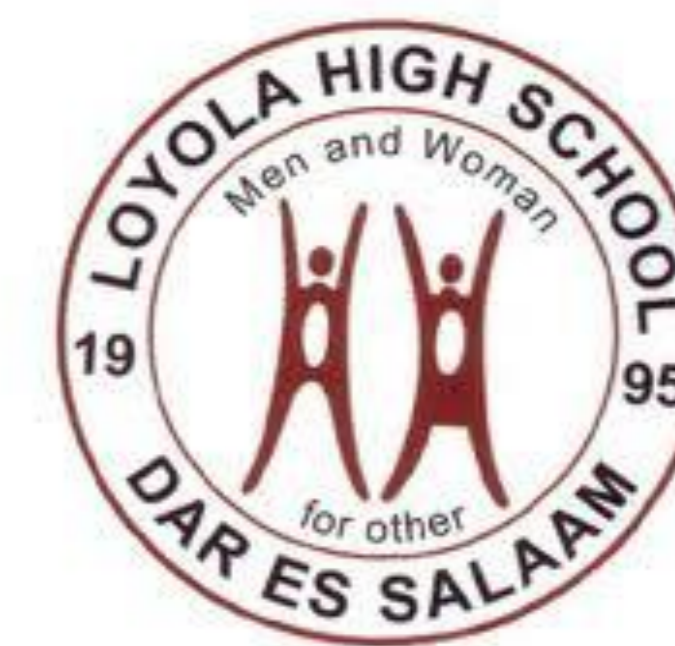# Computer Technology In Learning Mathematics

Isack Shayo and Adil Salum

Introduction:

This project is mainly a computer programming project. It involves development of an interactive computer program that is intended to be a learning resource for Mathematics subject at lower secondary level in Tanzania followed by evaluation to determine whether it met it goals. Mathematics is one of the subjects leading by failure rate and in fact the most feared subject by students at this level. The project tries to address the need for an effective learning resource to help rectify the situation.

This program attempts to bridge the gap between books and teachers. It has added functionality and intelligence that normal textbooks or educational DVDs do not have. This makes the program to be able to answer students' questions, provide explanation and administer tests to the student. It therefore acts as a tutor to the student. It has therefore been called the *Mathematics Tutor.*

From left to right: Isack Shayo, Sr. Maria Samy(computer teacher), Adil Salum
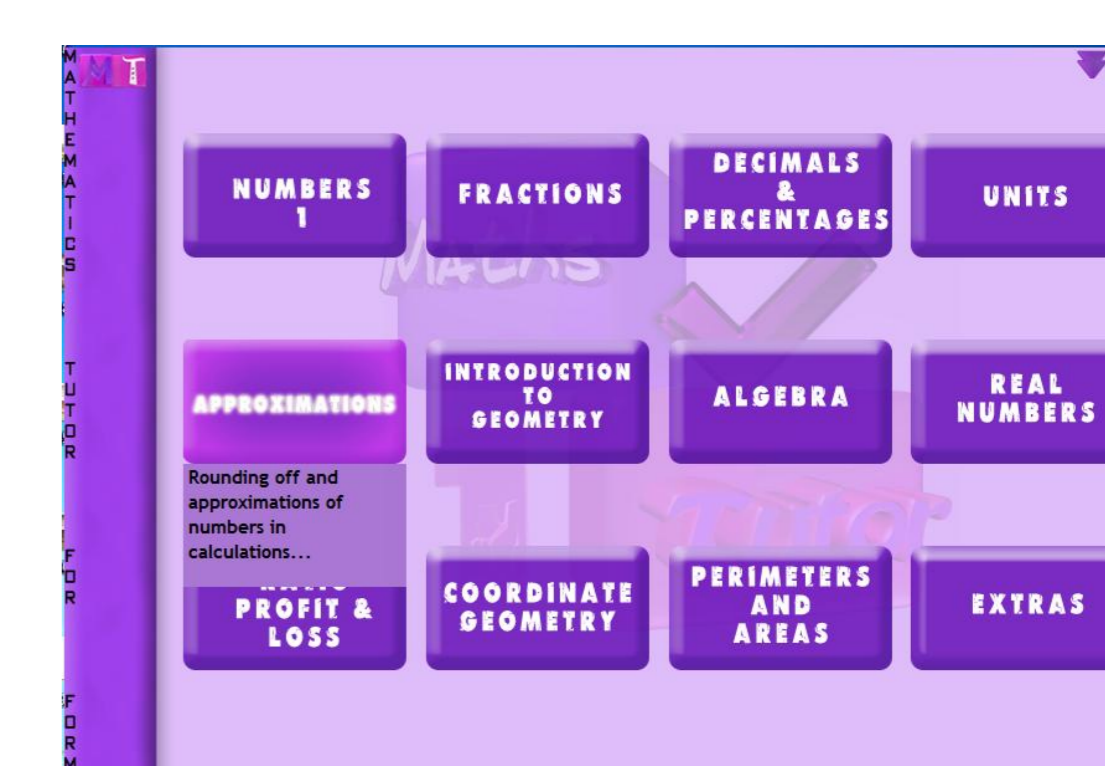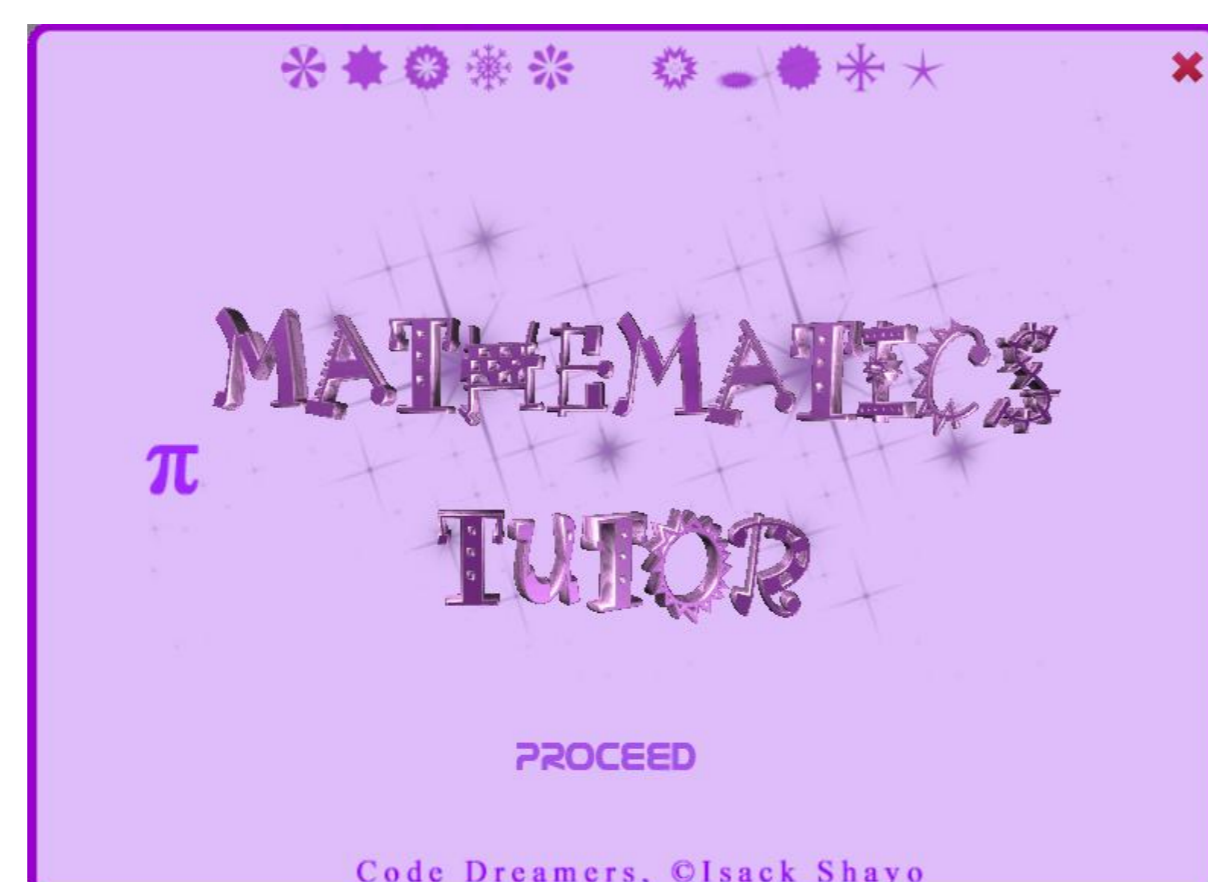
Methods

On the technical part, the program was developed by a computer programming language called Visual Basic under the platform Microsoft Visual Studio 2010. This made the programming process easier but limited the program to only run under the Microsoft Windows operating system, even though this is no real challenge because most computer users in Tanzania prefer and use Windows. The graphics were made on Adobe Photoshop and Aurora 3D.

During evaluation, the following steps were taken:

Introducing the Mathematics tutor to students i.e. the focus group of 6 X 2 students chosen randomly to minimize bias.

An experimental group of 6 students was given the program and allowed to use it to study the chapter *Approximations* which was already taught in class but not mastered, and the control group was not given the program.
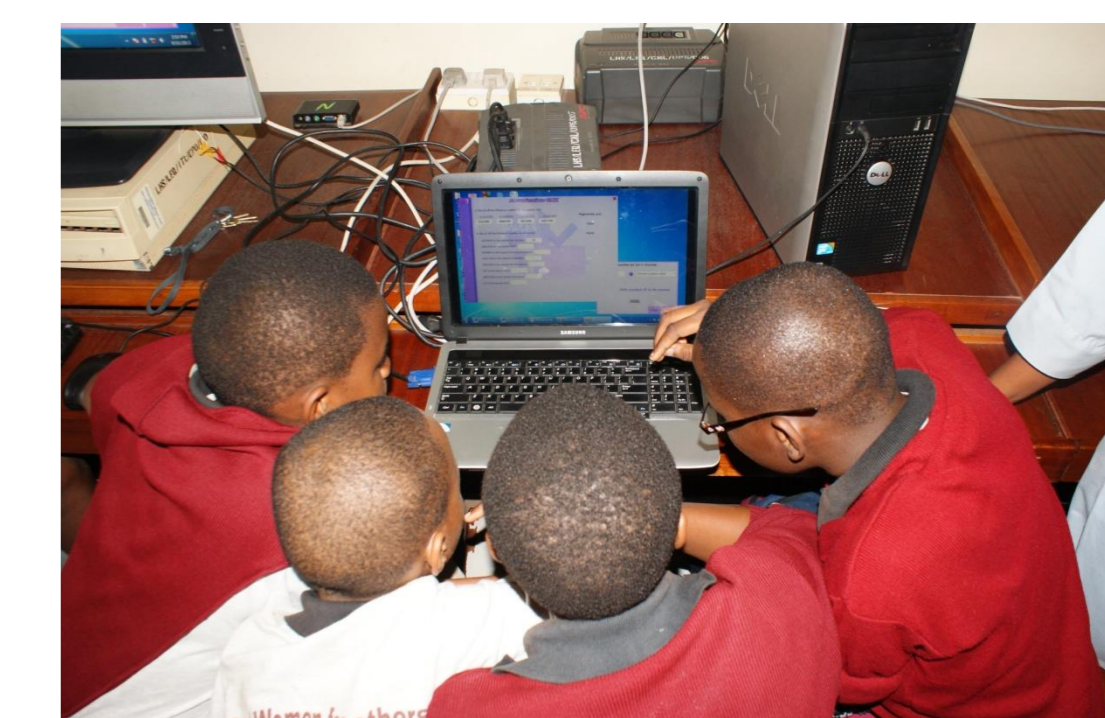
Thereafter, both groups were given a standard written examination to compare the results of the two groups to determine the extent of achievement of the *Mathematics Tutor*. Then the control group was also given time to use the program.

Results:

This project was aimed at seeing whether the *Mathematics Tutor* would increase students' ability in solving Mathematics problems and generally promote students' interest in the subject. Therefore, apart from quantitative data, it was important to ask the students on what they felt about the *Mathematics Tutor*.

In the end, all students said that they had liked the *Mathematics Tutor* and would like it to be given to them as a learning resource. Some said it was cool and most believed it would help them increase their academic performance. On our part, we observed that initially both groups of students were generally poor in Approximations but increased their ability in solving the questions (in the program) with more exposure to the *Mathematics Tutor*.

Conclusions:

Relating the data collected and observations made to the hypothesis, it can be seen that the *Mathematics Tutor* has indeed been able to cultivate interest in Mathematics to students and also more importantly it has facilitated increased the academic performance of the students in the subject.

It is therefore safe to say that the *Mathematics Tutor* can have the same impact on the subject in the entire nation if made available to the entire public. This is a digital generation, so the society should flow with the changes and allow computer technology to be applied in the various sectors of life, including education .

Further information:
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