Interactive tools for Mathematics learning related to the Cryptography

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Abstract- **Education is very important nowadays. The researches in education are increasing year by year. This enhancement of the researches are the important aspect in the development of new educational methods techniques. Nowadays, the information society in our region needs wider educational spaces supported by the internet connection that provides a good tool to use educational technologies using online applications. Indeed, interactive tools give us privileges to have access to a huge amount of information in a multi-sequential way by using specifically suitable tools for the learning of a specific knowledge. These interactive tools have many advantages for learning mathematics. In our case, we present an interactive tool to show the main applications of Modular Arithmetic in a brief theoretical environment.**
Key-Words- **Modular Arithmetic, Interactive Tutorials, Hypertext, World Wide Web, e-learning.**

1. Introduction

The most widespread uses of technology in education comes out in the form of learning interactive tools. Using these Interactive tools are a very good complement to traditional learning via notes, books, etc [1]. There are a lot of studies, research and development such as multimedia applications, online tutorials and web application facilitate the way of educations using computer technology [2].

The reading, by exploration or navigation, of a hypertext is interactive. The reader makes visual sweepings and searches of fragments of interest. We recommend using textual or graphical tools that show in the screen and that allow the user to identify and to differentiate the contents of the hypertext [1]. When we use multiple media formats in our teaching, it will enrich experience of the users and improve the process of learning. Using this kind of multimedia application in an education stimulates students interest in a topic and enhances their motivation [3].

In the mathematical concepts and algorithmic procedures in the classroom is often difficult to describe. When the lecturer can explain the topic with different coloured chalks and explaining around the picture in the board or teaching using a understand little more than static explanations. In this sense, using a good graphic interface environment will surely be a helpful for a

better understanding of the mathematic concepts or how we can implement the algorithms [2].

During the last years, visualization software tools are increasing and becoming very popular and used in the education purpose, as a lot of publications have been done in educational conferences and journals.

We are working in Interactive tools four years ago, Interactive tools are being used by lecturer on the class lectures and students when they want to learn by themselves.

In this paper we are going to present our experience on using these Interactive tools for mathematics learning in the teaching and learning ways. We will also analyze the main requirements for these Interactive tools should carry out to be helpful for both lecturers that are not coming from computer area and the students in the first topic and we will present the advantages of these Interactive tools for mathematics learning that provide in learning processes [2].

Our objective is the development of interactive tools for Mathematics learning related to the cryptography to be used both by lecturer in the class and by students when they want to learn by themselves.

The use of this kind of tools in the class allows to visualize concepts, as well as to show a great number of examples in little time. The saved time can be used to do active learning activities.

2. Optimization of students' study time

When the students look up things of their own interest, they will find using the modern technology is very handy. In this case, the teachers should take improvements of this fact and should try to prepare for them such multimedia material which will optimize their study time. By creating this multimedia application, it will let students' study more effective, time efficient and explaining the topics will be more understandable [4].