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Computer Assisted Training on Mathematics Lesson for the 6th Grade Students on Azerbaijan Middle Schools

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Abstract

In this study constituting a computer program was taken as basic for in Azerbaijan secondary schools 6\textsuperscript{th} class students well understanding Math and personal development Computer program was prepared in HTML language. As Website, it was brought into a useful form for whole students in all school. Website contains whole subjects of 6\textsuperscript{th} class Math book.

The students login and choose the subject and learn. After than solve the problems about with subject. After the paragraphs containing some subjects 15 exam questions were put for the students check himself. After solving this problem, computer program evaluate student’s knowledge 5 grades.

This evoking big concern in the students was present to Ministry of Education for it was used in whole at schools in Azerbaijan.

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1. Main text

In our modern world, computers are used as education tools where various new technologies are used together and they present very important, creativity and productivity increasing opportunities both in the public and in the private sector [Dr. Ismail Ipek., 2001].
Computer based education is a modern education style used in education environments where the teacher is included too. The computers have characteristics of educating with activities like presenting the lesson contents, repeating when necessary, problem solving, exercising etc. Therefore, the point of question is using the sites which are prepared with the purpose of education on the computer based education. As mentioned before, according to the researches, using computer on the education process provides students to develop thinking abilities, and at the same time increase their success level. In addition to this, computers create positive effects on the attitudes of students towards lessons and learning [Gibbobs, A. S., & Fairweather, P. G, 1998].

For this reason, a computer program has been created by us with the purpose of making the mathematics education easier for the 6th grade students in the Azerbaijani schools; arouse interest for science, to ease the teacher struggle which is very hard. This computer program has been prepared in the site format with the HTML language and fully covered the mathematics lesson content for the 6th grade. As the program had been prepared in terms of a site, it can easily be given to all of the schools in Azerbaijan with internet and houses using internet. That is why students can learn mathematics easily and profoundly either at school or in their own house. The main page of this course which is named as “Mathematics 6” is shown on Fig. 1.

4 different buttons have been placed to this page. Three of those take place on the left side of the page. Those are the buttons of “Mündericat” (Contents), “Imtahan” (Exam) and “Yaratıcılar” (Site Creators). The fourth button is the button of “Click here to download AzeriFonts” written in English with lower case after the “Riyazziyyat 6” (Mathematics 6) subject on top and the middle of the page. There might not be AzeriFonts (the letters of Azerbaijan alphabet) in each computer. For this reason, the alphabets of AzeriFonts have been copied to the file where this program is written and recorded. When the site is opened, even if the writings cannot be read properly, when clicking to the “Click here to download AzeriFonts” button, the writings in the main page are my like mathematics? If you like, you can learn it in your own computer very easily. If you don’t believe, come and see altogether. First of all, look at the buttons on the left side of this page. With the help of those buttons, you can see the contents of the site and you can find information about its creators. At the same time, you can also meet with other interesting parts of the site. Now take a look. Learn and have fun. We wish you success!!"

When we click to the “Mündericat” (Contents) button in the main page of the site, “Mündericat” is opened in a new page. Here, you can find all of the subjects that take place in the 6th Grade Mathematics school book. If we click on any subject with mouse, the explanation of the subject will be immediately coming to the computer screen (Fig. 2).
When we click to the subject “Prime factorization of numbers, GCD and LCM” that take place in “Mündericat” with mouse, the page indicated in shape 3 is opened. The numbers are shown in the upper line of this table in here, and in the bottom line, the number of the prime factors that divides them are shown. Here, the numbers of prime dividers of the numbers that have only 2 dividers are shown in red color. Those numbers which have the number of prime dividers as 2 are also primal themselves. The dividers of other numbers are shown in black color. Those numbers are complex numbers (Fig. 3).
In this page, at the same time in the entire site, the rules are given in the red color. When this site was prepared, the requests of the 6th Grade students of that time have been taken into consideration.

After each lecturing given in the site, the solutions of various questions about that subject takes place. The question solutions for the GCD and LCM subject that we told above is given in another page (Fig. 4). After those solutions, lots of questions are given for students to make free solutions. In the site, after each subject, 15 questions are given for students to test their own knowledge.

When you click the “Exam” button that takes place under the “Contents” button given in the first page of the site, a new page is opened named as the “Tests”. In this page, various subjects take place for students to do free test (Fig. 5). The student can test his/her own knowledge by solving the test questions of whatever subject he/she choose to. After the student chooses the subject, he/she should register. Afterwards, 15 test questions come about the subject he/she chose and after the student solves the current tests, the computer evaluates the knowledge of the student. Besides, the solutions of the student’s wrong solved questions are shown in red, and the correct solved responses are shown with blue colored column.
When you click to the “Site Creators” button of this site prepared for middle school students, the pictures of people who had created the program and information about them comes to the computer screen. Those people are Novruz Beşirov, Aynure Beşirova and Fariz Beşirov.

Finally, we should also remark that this prepared site has been completed with a very interesting and funny section. On the “Delphi” programming system in the context of the site, as those programs that teach students the rule of finding the GCD and LCM of the numbers and that makes it possible to calculate the GCD and LCM of requested two numbers, and as the programs that inform about palindromic numbers and that show whether the given number is palindromic or not could work freely, they have been presented to the Ministry of Education in Azerbaijan to take place in the newly developed internet site of the Ministry.

2. Results and Discussion

This site is prepared for Azerbaijan schools’ sixth grade students to learn mathematics online with ease and it covers mathematics textbook’s entire curriculum. In a step by step fashion the site is designed and the content is prepared. After each step completed work is shared by mathematics teachers and active students and their opinions are regarded. After the site is finished, it is tested in parallel classes of 10 Baku schools (Schools number 7, 45, 48, 85, 95, 104, 118, 245, 269 and 302) in 2005/2006 school year.

Two parallel classes are chosen from each school and the test results showed that in the classes whose students do not use the site, of every 30 students 15 students (%)50) are successful. When the parallel classes are considered, of every 30 students who use the site to learn mathematics 27 (%)90) are VERY successful. The main reason behind this success was in the site students are advised to do exercises of each chapter. These results show that the site plays an important part in improving mathematics skills of sixth grade students.

After one year of trial suggestions of the teachers and active students of above mentioned schools are accounted for and the site is established fully functional. This site is integrated to Azerbaijan’s local teaching portal and has been in use since 2006-07 school years. Over 4 million of students benefited from the site ever since.

3. Acknowledgements

We express our great gratitude to the principals of above mentioned schools for their efforts on separating parallel classes for testing of the site. (Classes denoted 6a used the site for mathematics class and classes denoted 6b did not use the site.) We also thank ministry of education workers for integrating the site to newly opened Ministry of Education Portal.

References


