USE OF THE PROGRAM HOT POTATOES IN THE TEACHING AT THE PRIMARY SCHOOL

Mgr. Tatiana PREXTOVÁ
University of Ostrava, Ostrava, Czech Republic
D10577@student.osu.cz

ABSTRACT: At present time, the information and communication technologies (ICTs) come to the forefront very markedly, and it has even in the primary education. Pupils acquire the basic skills and knowledge how to work with the computer already in the primary school. The use of the computers raises interest, motivates them to achieve better results, we use them in the learning process to support the different educational methods. So, the learning process will be more effectively, we use a computer to control the reached results of the individual pupils. Just the testing of the reached knowledge of the pupils and consequently the evaluation of the level of their knowledge, computer is becoming an invaluable tool.

The connection ICTs with the learning process can be, for example the program Hot Potatoes. It is a software pocket, enabling the creation of the feedback on the basic of the testing the knowledge of pupils. The software has the six different applications, namely: JQuiz, JCloze, JMatch, JMix, JCross and Masher. They allow us to create the different interactive exercises, combine them into one unit and publish them as Web Page.

Keywords: Program Hot Potatoes, primary education, mathematical knowledge, didactic test

1 INTRODUCTION

Program Hot Potatoes allows creating the different types and set of the exercises, that are based on the interactivity. The part of the pocket are the exercises in the form of crosswords, the assignment exercises, the order exercises or the possibility of direct inscribe answers. This program combines the information and communication technologies with traditional type of the didactic testing.

The name of Hot Potatoes is derived from the front page, where of the different types of exercises appear in the form of “potatoes”. Each of the “potatoes” is a different color and when we click on any of them, we can make the concrete exercises. JCloze (blue potato) allows us to create the additive exercise JQuiz (yellow potato) prepares the exercises us in the form of a quiz, JCross (red potato) creates from the offered options the crossword, by JMatch (green potato) we prepare and the assignment exercise and JMIX (turquoise potato) forms the order exercise. To create sequences of these exercises and their connection into one unit we use The Masher. Program Hot Potatoes is freely available at http://hotpot.uvic.ca/, where you can download the version 3.6 in the section “Downloads”. Customer interface and the work with the program is simple. The first start of this program requires a user name. Then this name is stored in your computer and by the creation of the exercises inserts into them as the identification of the author.

2 DIDACTIC TEST AND HOT POTATOES

The quickest way of the verification of the pupils’ knowledge, the revision their acquired knowledge is a didactic test. In the didactic test pupils work in a relatively equal conditions, by test is possible to test not only a wide spectrum of subject matter, but also a large quantum of the pupils, an evaluation of pupils' knowledge is implemented in a shorter time. Program Hot Potatoes is ideal for the creating didactic test. When we want to create the test, on the one hand, we can use all types of exercise, or on the other side choose some of them (the most convenient).

In the creating our didactic test, we used the specifically type of exercise JCloze and JQuiz. This is a test of mathematical knowledge, namely the theme, Solving linear equations. Tasks are for the pupils 8th grades of primary school. There are 10 variants of the didactic test, which differentiate between them a difficulty of test tasks. The first test is a test with the lowest difficulty, test number 10 is on the other side the most difficult. In the tests, pupils are seed with different tasks, and specifically solve the linear equations, or use their in the solving word tasks on the motion, joint work or in the determining the person's age. The tests are freely available at http://vvc.truni.sk, in the project "Vieš, čo vieš” (You know what you know). On the website we can find the tests from the other subjects too, tests are divided into first grade and second grade of primary and middle school. The portal is accessible and serves to the verification of pupils' knowledge from the different areas.
3 PROPERTIES DIDACTIC TEST

The quality didactic test should verify several basic characteristics. The most important are reliability and validity of the test. If we want a valid test, it is important to measure really the knowledge, which is measured (Chráška, 1999). The following parameters reduce validity of the test:

- too easy or too difficult tasks
- bad administration of the didactic test
- vague and obscure assignment test
- vague instructions to the test
- incorrect test evaluation (Rosa, 2007)

Reliability of the didactic test guarantees us accuracy how test measures and detects pupils' knowledge (Lapitka, 1990). These indicators affect reliability of the test:

- number of tasks in the test
- difficulty of tasks
- number of test pupils (Burjan, 2005)

The other important characteristics of the didactic test are the sensitivity and difficulty. The task is more sensitive, the more distinguish a pupil with better results and a pupil with weaker results. Tasks in the order of difficulty show us, which the assignments are difficult for pupils, and on the other side, less difficult.

A properly created didactic test should be a minimum of 10 test tasks, because the more number of tasks in the test, the reliability of the test increases. If we create test tasks, we have the following variants: the open tasks and closed tasks. Open tasks are based on the responses of individual pupils. For them we distinguish tell, whether it is a long answer (a few sentences), or the short answer in terms of formula, number, etc. (Burjan, 2005). Closed tasks we can be combined into several alternatives:

- dichotomous
  - pupil chooses from two answers
- assignment
  - pupil assigns the data from one set to another set of the data
- order
  - pupil orders the data from a group of the data according to a predetermined assignment
- multiple choice
  - pupil chooses from several offered options the correct answer (Chráška, 1999).

For multiple choice tasks it is important the choice of appropriate options of the responses, so called. distractors. The following principles are:

- it is a logically possible response within the assignment
- it is a typical incorrect response of pupils (Burjan, 2005)
- should not represent the same thing just another form
- we can find out distractors so that, the pupils solve the closed task as the open task and incorrect answers will be used as distractors (Chráška, 1999).

4 VERSION OF TEST

As it mentioned earlier, variant tests were made according to the difficulty of their tasks. Test no. 1 includes the least difficult tasks and Test no. 10 most difficult tasks. The tasks are similar in the type to the test; therefore we offer from all variations of the test just one of them. Each task shows us an idea of how a test looks like. Tasks are displayed as they appear to the pupils directly on the website http://vcv.truni.sk.

We are beginning the task from the test of the easiest difficulty. The assignment: Read narrowly every task, calculate and add or mark the right answer. Do equations – 5=−20x; x+5=0 have the same solution?
In this task it is to solve a simple assignment, where pupils have to find the radixes of two equations and discover, whether it is identical results. It is a task of the dichotomic type; the pupil considers, whether the assignment is true or false.

Other task is again the solution of linear equations, but it is now somewhat more difficult. The assignment: Read narrowly every task, calculate and add or mark the right answer. Do equations – 8x-2=4; 4x-1=-2 have the same solution?

The pupils find the radixes of two linear equations, and again it is their task to compare the linear equations. The assignment is a dichotomic nature; the pupils are detecting the truth, or the incorrectness of the question.

The third test sequence embodies tasks centered on the equivalent adaptations of linear equations. The assignment: Read narrowly every task, calculate and add or mark the right answer. What binominal do we add to two sides of the equation x-2=-6x-4, so as the left side of the equation has got only one member with unknown x and the right side has got just one a number?
The pupils’ task is to add the correct binomial for two sides of the equation so that the left side contains only the unknown \( x \) and the right side only numerals.

This assignment is again the equivalent adaptation of linear equations, it is somewhat difficult. The assignment: Read narrowly every task, calculate and add or mark the right answer. What binominal do we add to two sides of the equation \( \frac{3}{4}x - 4 = 3x - 0.1 \), so as the left side of the equation has got only one member with unknown \( x \) and the right side has got just one a number?

Finding a binominal and added to two sides of the equation - the task which pupils must solve again. The next task is dealing with the solution word tasks, which is centered on join work. This assignment is again the equivalent adaptation of linear equations, it is somewhat difficult. The assignment: Read narrowly every task, calculate and add or mark the right answer. One worker executes a work for 10 hours, the second for 15 hours. How many hours do you execute this work, if they work together?
In this type of tasks the pupil finds that the work makes by the joint power of the whole team is much greater than the sum of work makes by individuals.

Other assignment is dealing to solving word task on the motion. The assignment: Read narrowly every task, calculate and add or mark the right answer. From the village went off a tractor at 20 km/ h. About 10 minutes followed him motorcyclist at 60 km/h. For how many minutes would motorcyclist eventually run down tractor?

**Figure 6**

![Figure 6](image)

In this type of task it is important to notice that the speed tarries during the implementation of motion – constant.

Word task, centered on the determining the person’s age, is a bit greater difficultly. The assignment: Read narrowly every task, calculate and add or mark the right answer. Father is 32 years, son of 6 years. After how many years will the age of father equal double age of son?

**Figure 7**

![Figure 7](image)

It is a word task, in which a pupil must prepare and formulate correctly a linear equation to determine the person’s age.

Other variant of the word task is the task of the mixture. With similar tasks pupils clash against in the real life, but also in the other subjects - as chemistry and physics. The assignment: Read narrowly every task, calculate and add or mark the right answer. Daily milk production – 630 liters – was spilled to 22 cans, some of which were for 25 liters, 35 liters for others. All cans were full. How many cans were?
Again, this is appropriate composition of a linear equation, on the basis of her pupil comes to the correct result.

The penultimate task is centered on the finding different combinations of numbers. The assignment: Read narrowly every task, calculate and add or mark the right answer. Identify four consecutive odd numbers, so that the sum is 472.

They are tasks centered on the logical thinking of pupils, the right combination, and the reflection. The final test consists of the tasks again, where pupil searches and finds unknown number, or a group of unknown numbers. The assignment: Read narrowly every task, calculate and add or mark the right answer. The sum of three numbers is the 75. The first addend is 24; the second is twice as large as the third addend. Find the unknown numbers.
5 CONCLUSION

All of the listed mentioned tasks and tests are available at http://vcv.truni.sk. The project called “You know what you know” is momentary in the stage of the proceedings and implementation (2010-2011), the results and total evaluation of pupils’ knowledge of the theme Solving linear equations will be available early in 2012.

REFERENCES


