FORMATION OF THEORETICAL CONCEPTS ON CULTURE DESIGN USING COMPUTER TECHNOLOGIES

M. Tsoy\textsuperscript{1}, I. Rasulov\textsuperscript{2}, F. Tolipova\textsuperscript{3}

\textsuperscript{1} Uzbek Scientific Research Institute of Pedagogical Sciences, 98, Uzbekistanskiiy Ave., Tashkent 100097 Uzbekistan
ravil1091@mail.ru
\textsuperscript{2} Kokand State Pedagogical Institute, Uzbekistan;
\textsuperscript{3} Tashkent State Pedagogical University, Uzbekistan

Abstract. In the article treated the process of learning student’s theoretical concepts, which are an important step in the development of a culture of design. Particular attention is given to the transfer of pupils (students) theoretical information about the culture of designing persons, identifying the key concepts for its constituent elements and their content. Basic concepts covered in the survey on the basis of quality of design, concept design, general and specific objectives, activities of design, design tools, practical qualifications design, creativity, innovative approach, prediction, planning, design, simulation, using the conditional values, diagrams and symbols design values. The article said that that as the initial stage of development of culture and creativity of design, theoretical and practical training in the creation puzzles using computer technology is effective from an educational point of view. Particular attention is paid to familiarize students with the rules effectively create puzzles with the help of technology on the basis of printed instructions. Students are given the same advice to resolve difficulties which may arise during the development of electronic puzzles.

Keywords: computer technology, concept design, create puzzles with the help of computer technology, creativity, cryptography, design, diagrams and symbols, engineering and design, innovation, modeling using conditional values, planning, operations, rebus.

When teaching the subject "Fundamentals of Computer Science" in the general education secondary schools, it is possible to build a culture of development and design of the students. When teaching this academic subject kompyuer is the primary means, with his help, you can implement the design work of various kinds. The first lesson on the subject teacher must having reviewed students with concepts, such as creativity, creative activity, creative work, the fruits of creativity, creative approach. Besides encouraging students to think, it is advisable to think in learning what creative work can be done, or what you can create projects using the computing system. In one school, one group of students in the computer created drawings, tables, charts, program Exsel, the second group using Word, wrote the text, the story, script or project tutorial educational activities third group prepared a presentation in Power Point, and another group placed object taken from the Windows program text Word, and it is the essence of the actions in question. Indeed, the students correctly judge. Because every action performed on the computer, requires students to have their own independent opinion, a creative idea. Pupils general secondary schools based on the trend of collaborative learning should establish a process for creating a culture of design in several stages on the basis of creativity in using technology computer. Including:

1 step. Familiarize students information on the history of puzzles, and development stage entity.
2 step. The pupils' questions on the history and development of puzzles reply together with a team of students.
3 step. Give students information on the rules for creating puzzles.
4 step. The pupils' questions on the rules for creating puzzles answer involving small groups.
5 step. In practice, students create puzzles show a few examples.
6 step. Questions the students to create puzzles in practice answer with individual students.
7 step. Give students an assignment to create puzzles based on the subject.
8 step. Ensure the creation of puzzles on the basics of the subject at a particular time in small groups.
9 step. Analyze the work of small groups from the team or other groups to create conditions for methodological advice from the teacher if necessary.
10 step. Overestimate small groups work together with a team of students.

11 step. Come to a conclusion on the results of completed tasks to create puzzles in small groups and to end the session.

As mentioned above, the teacher should explain to students the essence of the concept of "puzzle" before familiarize them with the rules for creating puzzles using COMPUTER technologies. To do this, he must use the following information:

According to the dictionary meaning of the term " rebus " (lat. "Res" – object, a thing "rebus" – with the subject, using things) means "to express event, Events, the essence of action or process using drawing, letters, numbers and certain contingent characters, words with a certain value, confused expressions". The term was used in the ancient Latin "Non verbis sed rebus", ie saying "not in words, but through things," was the result of widespread use. In intellectual, creative nature popularly accepted as a rebus common playful puzzle. Usually puzzles are created using letters, numbers, words, expressions, music, or special symbols. Puzzles as crossword skanvordov, anagrams are also considered a common intellectual games among people. by means of puzzles are usually encoded proverbs, fables, folk songs, folk hemistichs, aphorisms, expressions or words. (Available at: http://allforchildren.ru/rebus/rebus0E1.php)

If you think logically expressed by words, provisions, actions, processes, events and Events highlighted in rebus, we can say that the initial intentions of this puzzle formed from very ancient times. Based on characters, ideas cryptography there are about four thousand years ("Kryptos" – hidden, secret & "gramma" letter, lettering) constitute the foundations of modern puzzles. Cryptography is a secret known only to a written way certain actors who know the system. (http://kriptografiea.narod.ru/history.html)

According to cryptography has evolved from the time of formation of the letter as a technique (method) protection of the written text. Known as a confidential letter in ancient India, Egypt, Mesopotamia. If the first elements of cryptography used by craftsmen, potters, then later they are actively used for military purposes.

According to the conditions set forth cryptography messages, texts, words must be encrypted characters, numbers (code, code – symbols adopted for special correspondences). On used encryption method in this written history of cryptography method can be divided into five stages:

1. The first stage – about a third since tysyachaletiyado BC period to rebirth of East and West. In this period in cryptography prevoskhodstvovali ciphers based on a single (mono) alphabet. Its basic principles were written to change the text on a certain alphabet letters or characters of another alphabet.

2. Second stage falls at the IX century in the Middle East, in Europe since the XV century to the early twentieth century. In this period in cryptography guided ciphers based on poly (many) alphabet. Its basic principles were changed in a particular alphabet written text to other letters and symbols many other alphabets.

3. Third stage is the period from the early to mid twentieth century. This period is characterized by the creation of electromechanical facilities offering encryption. Ciphers poly (many) alphabet used to conduct secret inscriptions on such structures.

4. Fourth stage is the period of the twentieth century to seridiny 70 years. This period is described as a transition to the mathematical code in the history of cryptography.

5. Fifth stage is from 70 years of the twentieth century to the present day. This period is considered important in cryptography public key appeared. The emergence and development of the public key yaninga created the possibility of using its individuals.

Create puzzles inherent in cryptography emerged in the XV century in France. At the beginning of "rebus"s (Headlines) called performances in Picardy expressing comments are based on humor. Later today have become puzzle concept.

The first collection of puzzles published Etienne France in 1582. Then puzzles rasprostronilis in England, Germany and Italy, but in none of these cities are not widely rasprostronilis puzzles. In Russia the first puzzles published in 1845 in the magazine "Illustration". Puzzles published in the magazine "Niva" with I. Volkov were very popular in Russia. (Gilzer, in: http://festival.1september.ru/articles/310952)

In the history of attention was given to the riddle of publication as a separate magazine. In the Russian magazine "Rebus", was published in 1881. It besides puzzles published articles about parenting, psychology, world news. By solving a puzzles editor organized competitions and winners were awarded cash prizes. This log has become very popular among Russian readers and he regularly published for 20 years.
On the initial publication of puzzles in Uzbekistan there is no exact information. But on this occasion I must say that after 20 years of the twentieth century in Uzbekistan began to publish a series of popular educational magazines (for students and teenagers "Gulhan" at the beginning it was published with the title "Yosh kuch" from 1929), as well as published humor magazines (magazine "Mushum", 1923). We think that the publication of puzzles in Uzbekistan accounts for this period.

In the journal "Funcha" published in 1958 (2002, pp. 121-122; 2003, p. 172; 2005, p. 245) also printed puzzles for students of primary and high school students. Just in all eras of the last century in the newspapers published under different names printed puzzles related to all arena of public life. To date, accumulated practice of publishing puzzles not only in magazines, but also in the newspapers.

During practice in the classroom were answered the following questions posed by:

1. Is cryptography in the present day?

Yes. Today widely used modern, advanced cryptography different options, especially in the military and international diplomatic arenas. Since 90 years of the twentieth century began the process of designation of state standards on international documents based on cryptography. Therefore different countries choose for themselves the most appropriate code (code) cryptography. M: In the United States adopted after the contest in 1997 "Rijndael" used since 2000 in Evroppe "NESSIE", and in Japan "CRYPTREC").

2. As I understand it in the beginning of the message written by code (code) and transferred to a particular person. And today, by what means are sent a confidential record?

To date, delivery cryptography innovating and continues to improve. In order to protect the data that is written to protect the confidential records from attacks by, cryptography techniques are constantly being improved. As a result, in 1980 formed quantum cryptography. To protect confidentiality, including banking operations, as well as e-mail spam from individuals using mobile telephones, cash digital TV (Wi-Fi).

In the classroom the students acquainted with the rules of the following items to create puzzles:

1. All illustrations used in Rebus must be expressed in a noun.

2. With illustrations can express the subject in two ways:
   a) the common name of the object (for example, trees, plants, animals, etc.);
   b) self-titled subject (eg sycamore, lotus, bear, etc.).

Decision rebus hardest call is exactly the image of objects. Normally that would solve the puzzle correctly, you need to divide it into its component parts, ie first to write in the same order shown letters, drawing, figure, and then divide them into words and read his meaning.

In solving the rebus students should remember the following:

- If the subject is inverted (eg inverted plane) means that the word must be read from right to left;
- If the subject is depicted in front of one, two or more commas, the number of commas toskhodya need to remove the initial, second and other letters before or after the image; if you want to remove three letters, either before or after the pictures, letters, numbers, put one, two or three commas, if you want to remove four or more, in this case, before or after the pictures, letters, numbers, the corresponding figures sitavitsya + a comma (for example, "4", "5", "6", etc.);
- If a picture is worth a figure, then you need to read the letters in the name of the object shown in order of digits (eg, fourth, third, second, first);
- If the location of any letters represent two letters, in this case, you need to read the image of the letter with the prefix; individual syllables in rebus can be expressed by music;
- If a certain part of a word pronounced with the same cardinal number, it should be secured with the help of figures;
- If the subject or about a subject crossed out the letter, in this case the letter should be removed from the name of the object;
- If the top or near the crossed-out letters written by a different letter, then you need to read instead of the crossed-out letters need to read another written;
- If near – or above in Rebus picture shows two letters, and between them is a sign of equality, in this case, you need to change the letter in the name of the object to appear to the left side of the letter of the equal sign.

Usually Rebus can not express consoles and words such as “over”, “under”, “in”, “on”, “around”, but they can express through letters and pictures. Just in rebus hard to express words and prefixes such as “him” or “no”. Because of this reason, you can express them as attachments, showing the connection relationship of
one element to another element rebus. Sometimes expressed Rebus (slope of the straight line). In this case the figure allocated from znametelya expressed as oblique or half letters.

At the next stage were answered students ' questions on the rules for creating puzzles involving small groups. Here the teacher sent a small group to reflect on issues and combining their thoughts and answered their questions. Following questions were asked by students:

1. How can I express the situation in rebus consisting of two or three letters, but require a reverse reading? In this case you need to put the arrow on the word. And then you have to read the word on napravlenni arrows.

2. If you want to express the opposite line (vertical) letter how to implement it? If you want to express the opposite line (vertical) letter, in this case around the letters shown in the Rebus put a straight line. By direction of the arrow changes position of the letter.

At the next stage of training the teacher should show students create puzzles with a few examples. During practice, the teacher again theoretically acquainted students with the rules for creating puzzles based on the some examples.

At the next stage of training the students asked the teacher to explain to them again from the theoretical point of the process of creating puzzles. Teacher from time to time asking questions on phasing confirming verbally and visually explain to students. In this process the students received the following information:

1. On the "desktop" by clicking on the right side of the mouse, using the order of the "New" creates a "File."

2. On a blank page "File" to write zashifrovannoe (encoded) word and image, letter, number, sign symbols for notes, which open its iconic essence.

3. Opening the "AutoShapes" on the "toolbar" by four square in "Basic Shapes" is created with the help frame.

4. Clicking on the "Start" actions are performed in the following order: Using Start – Programs – Microsoft Office – tools Microsoft Office – Clip (Microsoft) selected the correct picture in the "File", which opened in the "desktop" with "Insert" inserted into the frame desired picture.

5. Actions are performed as in the previous procedure, is inserted into the frame desired picture, letter, number, sign notes symbols for.

6. Frame and all the elements in it grrpiruyutsya one group. Here you need to send the cursor to the "Select objects" in the "Toolbars" and you want to group the necessary objects.

Esla on your computer in the "Clip" no relevant pictures can be found on the Internet.

At the next stage of training the teacher gives the students an assignment to create puzzles and riddles to organize the creation of the subject in small groups for a certain time. After the assignment from the group analyzes of their work with a team or other teams, if necessary give methodological advice.

During practice on the part of groups to create the some rebus.

At the end of lessons the teacher re-evaluates the work of a small group with students and concluded occupation ends.

So, the creation of puzzles on your computer with a creative approach helps students build and develop a culture of design. Consequently, the creation of puzzles on the computer stimulates students to think creatively, and provides development of computer technology. As well as using creating puzzles pupils effectively memorize mastered occupation.

References