Using Of Computer Games In Supporting Education

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Abstract

The article describes the effect of using computer games in education process and has a important impact to its effectiveness based on the analysis of the results of recommended procedures and methods for effective use of computer games. The result of the analysis and definition of correlation of computer games and education on the basis of the learning game play design was created educational computer games. Attaching selected games were evaluated benefits by the introduced new element was evaluated as very beneficial. This learning process can be for some students considered most suitable learning style.

1. Introduction

Use of computer games in supporting education and the current interest in computer games show a great potential in the use of games in education. This problem is unfortunately not developing as quickly as possible. The main problem is that the games are underrated. The main aim of educational computer games is motivation and fun. To understand the problem, it’s necessary to define some basic concepts that relate to the games themselves. Currently, there are many global educational projects that are trying to build of games in education. Computer game designed especially for tablets and personal computers is focused on mathematics. Another great benefit of computer games is to develop a positive attitude to learning, ideally from an early age, and especially entertaining way, which had designed the Jan Amos Comenius. In the recent past there has been a major technological innovation in Czech schools, but there are still problems in the attitudes and prejudices of teachers on the use of games in education. One of the important aspects in the design of educational games is imagination, fantasy but also the experience gained by playing games.

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2. Computer game

Computer games are developed for players to have fun, but all the games are way too educational games. The player must be in the game always something to learn to achieve his goals.

2.1. What makes the game fun

“Children are into the games body and soul.” [2]

“When I watch children playing video games at home or in the arcades, I am impressed with the energy and enthusiasm they devote to the task. ... Why can't we get the same devotion to school lessons as people naturally apply to the things that interest them?” [2]

“You go for it. All the stops are out. Caution is to the wind and you’re battling with everything you have. That’s the real fun of the game.” [2]

Computers and video games are humankind's most enthralling entertainment. And it is caused by M. Prensky twelve elements:

- Games are a form of entertainment.
- Games are a form of playing.
- Games have rules.
- Games have goals.
- Games are interactive.
- Games are adaptive.
- Games are the results and feedback.
- Games solve problems.
- Games have representation and story.
- Games have interaction.
- Games have conflict / rivalry / challenge / opposition.
- Games can win.

In the world there are thousands, maybe even millions of games and all of these games contain most of elements Fig. 1. (a) Elements of games. Nothing else offers all these elements together. Computer games to beat the books or television. They used to offer the possibility of cooperation in the group, mostly it's self-study. A game that tired, it's not a game, but the limiting activity, that is performed with joy.

2.2. Important aspects of the game

Important aspects of the game are:

- Story
- Body games
- Accompanying the whole game, but without following the gameplay
- Plugged directly into gameplay
- The story as an extension
- The story accompanying the whole game
- The story connected directly to the game
- Interactive dialogue
Interactivity is limited in the game and so far inferior to real conversation, but have in the game warranted a
different approach, namely:
  o Dialogues and fun.
  o Immersion in the dialogue.
  o Decision-making and influence.
  o Playing through dialogue.
  o Game challenges hidden in the dialogue.
  o Artificial Intelligence

2.2.1. Artificial intelligence in games

According to the style and genre of games are used in various methods of artificial intelligence. The role of artificial
intelligence in games is to move the character, which does not follow the player and are also part of the game world.
Artificial intelligence is assigned based on roles that due to the player perform:
  • Opponents
  • Partners
  • Ancillary characters
  • Units
  • Commentators

2.3. Advantages and disadvantages of teaching with computers

Positives

• They develop students' creativity.
• They are fun for students, and they often do not even realize they are learning.
• Working with computer technology.
• Substances students work through different senses (sight, hearing), and I can remember it better.
• Students themselves choose a time when they will learn.
• Teaching is interactive.
• Better adaptation to the pace and ability of the student.
• They are more illustrative than traditional teaching.

Negatives

• Health problems, burdened with musculoskeletal system.
• Students can develop an addiction.
• evaporates motivation to read books.
• Students are alienated from each other, communicate together.

Negative consequences can also capture the state of education in poor deployment of ICT for example:
• High maintenance and preparation of ICT, ICT possibility of failure.
• Increased demands on teaching capacities school.
• Trivialization communication and reduce levels of language.
• Social leak.
• Trying substitute teacher computer.
• Deploy the computer where the teachers are not prepared.
• Internet can be a source of improper activities and materials. [1]

3. Progress

Advances in Cognitive and Educational Sciences identified the optimal environment for learning. Game developers
these features implemented directly into the gaming environment:
• Clear objectives.
• Broad experience and practical opportunities that enhance the expertise and constantly provide new challenges to students.
• On-going monitoring of progress and use the information obtained to diagnose performance and adapt the teaching to pupils, investigations and responses to questions.
• Personalization.
• Infinite patience.
• Sway.
• Time on task.
• Motivation and a strong focus on objectives.

4. Conclusion
Games allow you to continuously monitor and control their progress through feedback. Computer games for players can develop cognitive, motor and spatial skills, and also help to improve ICT skills. They can be used to learn the fact that the principles of complex problem solving, creativity or can provide practical examples of concepts and rules that would be otherwise difficult to illustrate in the real world. Especially may be very useful in carrying out experiments that could be hazardous in real life, such as the use of hazardous chemicals. Despite all these advantages, not all digital games can be used in the educational process. Computer games are based on the assumption that during their playing players have to learn, explore, obtain additional information during the game, remember, and work together to achieve further progress in the game. So play can be described as a process of learning and one of the main advantages of computer games is their ability to give gamers an environment where they can make mistakes and eventually they learn. Such an environment may be particularly suitable for students who are pragmatic and like to experiment. Using computer games might better understand some of the concepts that would otherwise be perceived as complicated and boring. Computer games also improves collaboration between users and are in a sense similar to the work environment, it can simulate where users can exchange information and learn from each other. Multiplayer games develop competition between players with each other and their mutual cooperation by encouraging players to join into teams and compete with other teams. Many gameplay elements combined and designed effectively to educational games, players can learn many things engaging and motivating way. Used for example for the development of cognitive skills to develop new or existing skills and rules. Games can teach old things in new ways.

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