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DIVERSITIES IN USE OF COMPUTER GAMES AND TOYS IN EDUCATION PROCESS

Abstract: The presented article reveals suggestions and possibilities of employing the most modern technologies in the process of child's growth. The present world enables of games, computer multi-programmes, toys and it is very essential to apply them for educational reasons or coping with inner conflicts of moral nature. The latter and the like problems appear in interactions with other people. With the help of properly designed 'aids' it is possible to create such a 'laboratory' or workplace that enables children, during its functioning, to experience essential problems in their development not necessarily staying with live people knowledge simultaneously.

Keywords: education, games, toys.

INTRODUCTION

Nowadays there are a lot of important diversities in the field of the ICT practices among children all over the world. These differences are the result of having access to computers. While progress in the development of communications technology is observed all over the world a considerable number of children still remain with little or nearly without access to computers.

Statistics says that out of over 15.000 children aged 9–17, 35 per cent [5] of them (in Europe and Central Asia) have practically no access to computers. According to one of British latest surveys 74 per cent of parents were certain that their children were more creative because of computers. What is more 85 per cent of parents were sure that their children treated their schoolwork in a more enjoyable way. But 15–26 per cent of parents were of different opinion. It is known that some families are better positioned than others, because of financial and attitudinal reasons in order to use the new chances, which are being opened for them nowadays.

The 2000 "Census At School" research depicts that parents' ICT decisions are considerably different in the case of the primary school children than in the secondary school children. The number of families with children aged 0–6 possessing electronic technologies is lower than such families with children aged 5–10 (it is actual for England, Wales and Northern Island).

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These days there are a lot of electronic means of information and communications for children such as mobile phones, personal computers, access to the Internet. A lot of parents seem to be worried that their children may be deprived of indispensable means of education if they don't have any technologies of the kind. In this case, it is evident that some "programmed learning" packages can have the desired effect in essential skills. But formal instructional approaches to early numeracy and literacy are also effective in enabling children to master the basic skills while they are young. Despite the usual ways of learning children also need the software because they find it fun and sometimes it makes their learning enjoyable.

At present people come to the conclusion that what they acquire in schools, colleges and offices are becoming unnecessary while technology develops. Today it is obvious that being able to learn all life will be necessary in the case of people who wish to have constant employment. It leads to the conclusion that children acquiring basic computing skills will become familiar with the changing labour market, so it's obvious that it will be easier for them. The essential ICT skills often referred to as "new literacies" are thought of as so much important to children's success in future as the usual way of learning literacy and numeracy have been in the past. The "digital literacy" and "visual literacy" form the foundations of appearing awareness of a large number of ICTs. Both of these kinds of literacy tend to be best required by way of the children's playful participation in the process of receiving, using and creating information and images. It is not necessary to teach children to play with computers as soon as possible because computers are becoming easier to master.

USE OF VIDEO AND COMPUTER GAMES IN EDUCATION PROCESS

A survey carried out by Wajcman (1991) [5] reveals that many girls have treated computers as part of the field of machinery and mathematics, which means girls have often been intimidated by them. Several studies have pointed out that young girls are not so much interested in computers as boys are. Some studies supply us with the data that even the children in nurseries can distinguish tasks they think suitable for girls and they take up selective attitude to their toys. Another study reveals that girls and boys adopt different ways of playing with the computer. In 1995 Epstein performed the study of children who played with bricks [5]. In this activity girls built complicated structures and then used them in their more girlish play with princesses and ponies. During some experiments it has been found that girls get considerably more knowledge while applying gender – neutral software than male – oriented material. In view of this, it is sometimes argued that girls should more feminine video – games and other material suitable for them which in all becomes more problematic. The major problem which is the small amount of feminine software is founded on the conclusion that children using video – games have a tendency to use computers for other purposes more frequently. This reasoning suggests that such an attitude has

developed in them the confidence to encourage an interest in a career connected with multi – technological aspects.

Young children are very often involved in their computer games and start treating them like their favourite books. They play such games repeatedly. According to some research girls do not like certain features found in computer games: persistent hand – eye coordination, repeatedly the same action, collecting points, time pressure (1990). Older boys and girls have used different choices of video-games which means that boys have tended to select programmes with characters being heroes based on fantasies and in these programmes the main goal is to win and the play is linear. In such games speed and action are most important and the results can definitely be seen by means of one correct clue. Girls, on the other hand, like video-game adventures in which the characters appear to be everyday people and the main goal is to explore. Researches reveal the study of 60 young children who demonstrated that those with a good self-image had thought more positively of computers than the children who had a low self-image. In view of computing, children’s motivations remain under the influence of certain factors such as: the frequency of use, the experience of failure, the fear of failure and their self-image.



Fig. 1. Child plays a computer game [2]

As far as control is concerned it has been proved in terms of conducted experiments (“contingency mobile” experiment) that infants need consistent stimulation by their parents and they develop much better when their parents stimulate them electronically by using toys such as contingency mobiles and at the same time have all this process under their control.

The usage of games played with computers and actions leading to problem – solving decrease a certain number of early years educators. A well – planned computer game supplies children with immediate feedback, with coherence and with the possibilities for repetition which children require in order to built their skills and

self-reliance as learners. Adventure games and simulations make it possible to try out possibility and if it doesn't work one may try out another which is a matter of moments. While solving real practical problems in mathematics or science or design technology it is to a large extent difficult to put forward this kind of trial and error learning in the case of small children. In children's practical they can devote a lot of time an effort to an idea before they realize that it will not work. Adventure games can make a child attacked by foes but they always wonderfully survive to have another chance and in this way they learn not to commit the same mistake next time [5].

EDUCATIONAL TOYS

Children may enter interaction both with their equals and toy – robots. Children learn a great deal while observing the behavior of other imitating affect the level of children's moral reasoning.

Electronic toys can function as such models as well. There is a certain kind of toys that offers very important learning opportunities to children and it is known as the 'relational' robots such as Furbies, Tomagotchies and robotic puppies like Techno and Aibo. They are named 'relational' because they reveal emotional states, therefore children engage in emotional interactions which provide them with pleasure. These toys become increasingly designed to nature and to learn.



Fig. 2. Aibo dog-robot Sony company [4]

For example types Aibo (Figure 2) and Techno learn new language and movements from their interactions with children. Such electronic toys supply children with simple examples of other creatures who feel emotions, think and learn. It is strongly associated with two essential developments in children's psychological development, that is their 'metacognition' development. The first of these developments is related to children's understanding that other creatures possess their own minds together with their own feelings, perspectives, and knowledge. The most com-

monly adopted theory nowadays is that understanding is essential to the creation of social relationships [5]

Similarly to giving children actual and useful perspective with reference to emotional states and processes of learning, relational toys are highly motivating devices which are strong examples of the processes of control technology. Generally children learn how toys react to their own various actions and words and in this way how to control toys and their development.

It may seem to evident that electronic toys might have special in – built programmes whose aim is to give them the knowledge of their proper moral behaviour and in this sense they would function as teachers. An example of such behaviours may be robots which can analyse people’s behaviours, e.g. Robovie.

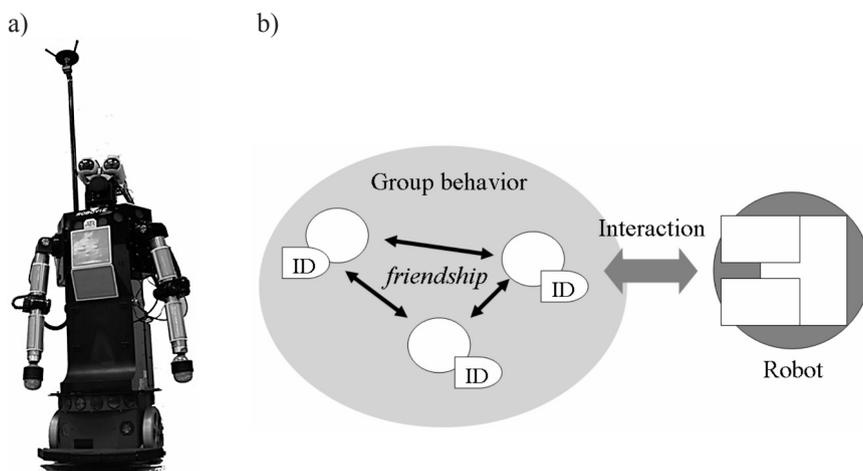


Fig. 3. Robot ‘Robovie’: a – outward, b – scheme of reading behaviours [3]

The application of this type of robots enables the analysis of pupils’ behaviour in class as well as proper selection of educational lessons programs with the aim of better group integration.

Another kind of toys might perform the role of a model which in particular situations reacts morally and the child could observe this toy robot in relation with another child or its parent how it properly and morally functions in this two-person relation.

We may use toys that may contain their own programmes as well. Plenty of such toys are easily obtainable and popular among young children today like Roamer from Valiant Technology and the Pixie and Pip from Swallow Systems. All these toys allow children to be changed into various characters. Their ways of controlling things and the number of actions they perform are different among them. Their simplicity doesn’t create errors and forms commands that are possible. There are a lot of ideas how to use Pixie and all of them are on many websites. Due to such



Fig. 4. 10-years old boy plays with *Robota* [1]

aids (Pixie) children are able to learn for example how to behave as a school bus collecting school children from bus stops and taking them to their schools. We may also use Pixie to present numerous characters from well-loved stories and blank Pixie cover to create children's own designs in various technical ways such as doing it by hand or with a paint or graphics computer application, etc. [5]. A lot of software items that have been rapidly produced lately, are focused at the domestic market rather than the educational one that has been intended for very young children. A large proportion of this takes on the shape of interactive stories games full of adventures and virtual environments. All these programmes are similar to games with strong educational aspect and they also different in many respects which enable progress and development of skills.

It would be advisable if the actual computer games used by young children had a few educational important features.

CONCLUSIONS

We short describe some examples of diversities in formal instructional approaches to early children numeracy and literacy as effective way for enabling them this basic skills. This new literacies are important to children success in future. In example: several studies have pointed, that young girls are not so much interested in computers as boys are. During some experiments it has been found, that girls get considerably more knowledge, while applying gender-neutral software than male-oriented material.

A well planed computer games supplies children with immediate feedback. We find, that new effect in use of called ‘relational toys’, that are highly motivating devices in some senses they would function likewise as teachers.

Our final conclusion is, that on basis our small literature review – it would be advisable some rational and careful diversities in controllable use of computer games and relational toys, because their have a few educational important features.

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ZRÓŻNICOWANIE W WYKORZYSTANIU GIER KOMPUTEROWYCH I ZABAWEK W PROCESIE EDUKACJI

Streszczenie

W artykule przedstawiono propozycję i możliwości wykorzystania nowoczesnych technologii w procesie rozwoju dziecka. W dzisiejszym świecie można posługiwać się różnymi grami, oprogramowaniem, komputerami, zabawkami, przy czym istotne jest ich użycie w celu edukacji oraz radzenia sobie z konfliktami wewnętrznymi natury moralnej. Stosowanie odpowiednio zaprojektowanych „pomocy” edukacyjnych może zapobiec problemom (konfliktom) zachodzącym w relacjach między ludźmi. Odpowiedni warsztat pracy (laboratorium) umożliwia dzieciom nie tylko nabycie odpowiedniej wiedzy, ale także odczuwanie ważnych rozwojowo wydarzeń i relacji, niekoniecznie będąc w towarzystwie z innymi ludźmi.

Słowa kluczowe: edukacja, gry, zabawki.