

PlayToLearn: A Game Adventure In The Realm Of Si Piuu

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The Hardware components of a Personal Computer can be imagined as people who live in a Realm. All the people of the Realm can be depicted as Gnomes, each one committed to carrying out a particular role. With a little imagination, there are exactly the same relationships to be found in a Realm that there are in a PC: gates to the external world, artists who produce paintings and sounds, Masters who oversee the whole process, libraries to store material in, buses to transport material, ambassadors who are familiar with the communication protocols, servants and as many other Subjects as one can imagine. The PC (i.e. the Realm) is governed by the CPU, i.e. His Majesty. The name of the king is Si Piuu. Such ideas are analyzed in depth in [1].

Following on from these concepts we have developed a computer application which helps children to interact directly with the Realm (the computer itself). The main criteria behind the application design that we have taken into account are:

Fantasy and imagination: placing children inside a simple adventure game representing the Realm environment;

Interaction: providing the opportunity for children to interact constantly with characters inside the Realm, getting information, answering simple questions and trying out simple tools or didactic games;

Collaboration: placing children in a multiplayer environment, where other characters represents other children or teachers;

Dynamic storyboard: enabling children to follow different paths inside the story which means that the story changes dynamically depending on the type of answers children give;

Ease of use: the overall shape of the application was designed with the particular type of target users in mind that is assumed to be children aged 5-10.

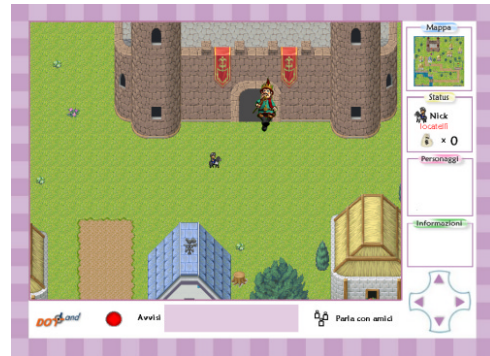


Figure 1: A frame of the game: the Avatar encounters His Majesty Si Piuu

When the child meets a Realm character he comes into a special room where the character introduces himself, explains his role and finally gives to the children the chance to interact. The interaction may be:

- a simple quiz to test childrens understanding;
- a simple game or tool demonstrating how the character can be useful in the Realm. For example Vi Giei will enable children to make a simple drawing or colour in specially prepared colouring drawings.

Placing characters with a blocking quiz ensures that when the child arrives at Si Piuu's palace he or she will already have acquired a good understanding of previous subjects. In this situation, advancing in the story is a clear metaphor for the advancement of knowledge. Thanks to the multiplayer connection, teachers and others who monitor the children's use and progress can obtain this information simply by looking at the map: the child's position on the map shows the point he or she has reached in acquiring knowledge.

Categories and Subject Descriptors: K.3.2 [Computer and Information Science Education]: Computer science education.

General Terms: Documentation, Human Factors, Theory.

Keywords: PC, Hardware, Children, Analogy, Fantasy, Play, Self-identification.

1. REFERENCES

- [1] Giovanni M. Bianco and Simonetta Tinazzi. One step further the ACM K-12 final report. A proposal for Level 1: computer organization for K-8. In *Proceedings of the 11th Annual ITiCSE 2006*, Bologna, Italy, June 2006.