

An End User Development Environment for Culturally Contextualized Storytelling

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Abstract. This paper describes an environment that users can develop a narrative game as a product, to be used at school by teachers, considering students' culture expressed in common sense knowledge, for storytelling, allowing teacher to create, configure, adapt and evolve stories according to student's social economics and cultural reality and use a common vocabulary. Consequently, teacher enables them to identify and get interested in collaborating with the teacher and other students to develop the story, being co-authors. These stories created can be considered as a product of the narrative game software. Although building these products, teachers can also monitor the children's learning process for elaborating their experiences, being able to support them and make interventions when necessary, promoting a safe and health student's development.

Keywords: Narrative Game, Context, Common Sense, Education.

1 Introduction

School ambient is very important to the children's intellectual and socio-cultural growth. At school children can expand their interpersonal, cognitive and linguist skills. Therefore the quality of relations established in school, specially in children's education, can affect their learning and development. Because of this,

the relationship in the school among students and between students and teachers is very important.

On the other hand, teachers could have difficulty to promote these interactions; some times they do not have support to promote these interactions. In this context this paper describes a narrative game that intends to support the teacher through storytelling to interact with their students. The teachers are co-authors of this game, because they can configure, adapt and evolve the stories by themselves, and they can tell stories using culturally contextualized information that are displayed to them according to their needs during the narrative.

This paper is organized as follow: section 2 the game's prototype is presented; on section 3 describes about the use of common sense knowledge in the narrative game; and last section 4 discuss some conclusions.

2 Contexteller

According to Piaget (1999), games are directly related to the child's development. There are several types of games and each one of them has characteristics that help the child's physical and mental growth. Overall, games can be classified as (ANACLETO *et al.*, 2008): recreational, cooperative, educational and narrative. Fantasy in narrative games allow people, especially children, to feel safe to express themselves because they believe that what happens in fantasy has little or even no consequence in real life. According to Oaklander (1988) children do things, behave and move in their fanciful world in the same way in their real world. Because of that narrative games for their free expression and support to formule experiences are useful.

The narrative game proposed in this paper, Contexteller - storyteller contextualized by Common Sense knowledge, is inspired in Role-Playing Game – RPG (BITTENCOURT *et al.*, 2003). Like RPG, the game presented has as participants, the master who usually is the most experienced player and his task is to present a story to a group, with characters, their characteristics, scenarios to other participants, who are the players. These are not just spectators; they contribute actively in the story through their characters that choose paths and take on own decisions, and most of the time not foreseeing by the master, contributing to the spontaneous and unexpected development of the story. In the context work the master is the teacher who introduces the story and intervenes collaboratively with the players. The players are the students, the co-authors of the narrative.

For this game, it was considered a group of children from 8 to 12. Piaget (1999) describes that during this stage children are willing to make friends and want to participate and interact with other children's game. Therefore, there are great chances that the children can be interested in participating and interacting with the story being told collaboratively

Figure 1 shows the interface available to master. This interface allows the masters to see their card (I), dice (II), and text area (III), which allows them to read all the messages sent to them and other players during composition of the collaborative story. In area (IV) presents the common sense card and area (V) shows the cards of players.

The game has some RPG elements, such as: Magic, Force and Experience. The values of the first and second elements are defined by the players. These elements are considered to be one of the rules existing in RPG. This rule avoids many discussions that could occur during the story. For example, knowing what is the strongest or most powerful character (FERNANDES, 2008). The values of the elements are numbers to be considered in some situations. For example, a character with Force equal 5 is more likely to survive a crash than a character with Force equal 2. The master attributes the value of the Experience when the character achieves a particular goal stipulated during the development of the story, in short, dynamically.

This game allows teachers to tell their stories considering their pedagogical goals. It also intends to give computational support for the master to get help from contextualized information, both in the initial phase, i.e., the composition of the scenario and the characters to be presented, as well as in others phases, such as: story definition and sequence. This support is obtained using a common sense knowledge base that represents cultural aspects of students' community.

3 Use of common sense knowledge in the Contexteller

The game proposed uses the common sense knowledge obtained by the Open Mind Common Sense in Brazil Project (OMCS-Br), developed by the Advanced Interaction Laboratory (LIA) at UFSCar with Media Lab of Institute Massachusetts of Technology (MIT) collaboration.

In the project, it has been collected common sense of a general public through Web site. Common sense is storing in a knowledge base through the representation of knowledge in natural language sentences where it is processed (ANACLETO *et al.*, 2006). In this game, the common sense information is obtained through a card, which is presented on the master's interface (Figure 1). This card allows teachers to use common sense knowledgebase in the story script. Teachers can obtain characters or/and their characteristics through this common sense knowledge.

The card objective is to support teachers on knowing what students know about some story or even events, cause and consequences. And teachers can use this information to conduct the stories. In short, story definition and sequence. Because of this, players can feel connected with the story characters,

characteristics, scenarios and language that teacher defined with common sense knowledge help. Therefore, Contexteller does not teach common sense to teachers, but help them to know what students' knowledge about stories, because teachers already know about common sense.

For example, if the teachers want to use in the story a character that likes to joke and trick, they can through the common sense knowledge base obtain the following characters: Saci-Pererê, Iara, Curupira, Caipora (from the Brazilian folklore) and Joker (from Batman's), among other. Teachers also can get the characteristics for the characters or something that they want to include into the story. For example, some characteristics coming up from Iara's character are: a mermaid, long hair, beautiful, fish tail. Teachers can join such information with the story that they want to tell and to define the characters and their profiles, personalities. Players must choose a character to participate in the story.

During the story teachers also have support of the common sense. Figure 1 illustrates a situation where Iara character does not play because she wants to comb her hair and master continuous the story with contextualized information helping.

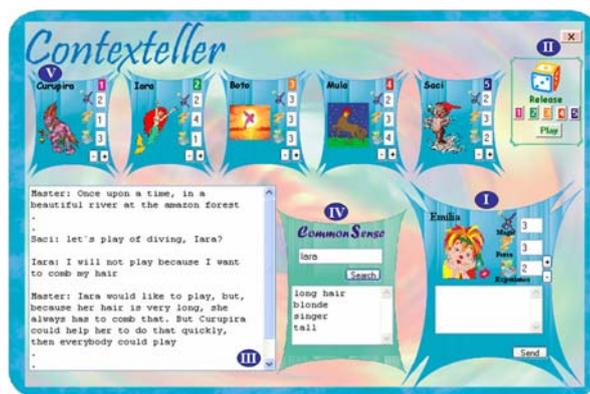


Figure 1. The interface of the Narrative Game.

All the regions in Brazil consider that Iara is a mermaid but in some regions she has different characteristic, such as: short or long hair, brunette or blonde, short or tall, etc. If teachers know the common sense of the specific region, they can tell the story considering the student's reality of that region. For teachers to give common sense information about any Brazil regions, they can select a filter in initial phase. The filter is used to obtain the common sense from a certain community or group of people, like teenagers from Rio de Janeiro in Brazil.

4 Conclusion

This paper describes a environment for online collaborative storytelling, where the players jointly develop a story under the advise of a master (teacher). This

game is meant to support a teacher in interacting with students which have different social and cultural backgrounds. Contextteller intends to allow students to feel closer and identified themselves in the story. Therefore, they can express themselves through the character in their cultural context. They know and identify meanings to the symbolism adopted by the master. These symbols can come from the students' community common sense knowledge to define the character, objects, in fairy tales.

The stories created are products and teachers can use these products to generate various materials, such as: a book, allowing the students to take stories to their home, to show them to their families and friends; to print the stories to students draw and paint their drawing, etc. When the students have a product that they are co-authors, they feel proud of themselves and motivate to participate on other stories creation. Teachers during the stories can also observe how the students lead their characters interacting with other characters. If the character is shy, aggressive, isolated from colleagues or other, these interactive situations can enable the teacher to interpret how the character is being conducted, and then to get to know better the students and their realities.

5 References

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