Chapter 14
Interactive Digital Storytelling for Children’s Education

Marcello Carrozzino  
Scuola Superiore Sant’Anna, Italy

Chiara Evangelista  
Scuola Superiore Sant’Anna, Italy

Veronica Neri  
Scuola Superiore Sant’Anna, Italy

Massimo Bergamasco  
Scuola Superiore Sant’Anna, Italy

ABSTRACT

In the past few years, an increasingly rich and involving trend in creating educational opportunities for schools has been observed. The combination of classical teaching approaches with the possibilities offered by state-of-the-art technology is yielding the innovative educational methodology commonly referred as learning-by-doing.

The current chapter presents the authors’ experience in setting up and using such a methodology for learning using technology-based interactive digital storytelling paradigms. Together with teachers and children, they undertake a multiple-step process. First, they choose a story. Next, the children learn how to interpret this story and how to translate the content into images they wish to communicate. Finally, computers are employed with the purpose of realizing a multimedia product and, at the same time, of enabling children to learn about the tools and the technologies they are using.

A number of real-life experiences are presented, together with a discussion of advantages and limitations of the proposed methodology.

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INTRODUCTION

Several recent educational approaches are successfully exploiting technologies (such as tablets, smart phones, graphics boards, videogames, etc.) which children use routinely. In this respect, Interactive Digital Storytelling represents an interesting means to setup a methodology that takes advantage of multimedia technologies to develop learning mechanisms. In general, when dealing with Digital Storytelling (Lambert, 2006), teachers have usually to keep into account previous experiences of children, their wish to participate, interact and collaborate, their attention span, the perceptual modes of their personal style of learning. In common practice, these principles are applied with the aim of helping pupils to share their skills and competences so as to create a network of complementary experiences. Another inspiring contribution comes from the theory of constructivism. Following Aristotle’s assertion “for the things we have to learn before we can do, we learn by doing,” promoters of constructivism put the stress on a collaborative, active, intentional and contextualized learning (Farooq, et al., 2007).

In our vision, technology is a tool which can be used to convey even complex concepts in an intuitive and playful way; this might become important particularly for those children manifesting attention problems, which are more and more common. Moreover, a technology-enhanced approach can often be more easily customized to meet different needs, personalities, capabilities.

Following these principles, we have setup a learning methodology and experimented a number of educational programs focused on three major objectives:

• Conveying a content, identified together with teachers, by telling a story which can originate from different study areas;
• Providing knowledge about technology, by means of a learning-by-doing approach enabling children to create a multimedia product suitable to tell the story;
• Enhancing children skills in participating and working together in a team.

BACKGROUND

Stories, be it traditional, modern, extemporary or classical, include in their plot emotions, perceptions, mental images and feelings. The simple schema: “beginning – problem – action – conclusion,” that can be identified in almost every story, also represents a synthesis of the activities that can be developed exploiting a story as a starting, central or ending point. The above mentioned schema has also been tested in educational contexts with the intent of having the children build a story (Petrucco, 2009). Children are also encouraged to develop creative approaches to their tasks and to proactively use new technologies when presenting their results (Barrett, 2006).

Interactive digital storytelling is undoubtedly and firmly bound to interactive multimedia, by means of which it conveys content and knowledge (Petrucco, 2009). Computers and multimedia let children create virtual environments, new worlds that interact with the real world. This interaction between real and digital allows to setup innovative educational methods and tools that exploit a novel concept of “tangibility”: toys, workbooks, drawings assume new embodiments and turn into virtual worlds, hypertexts, bytes. Joe Lambert (2006), director of the Center of Digital Story Telling at Berkeley, proposed a set of guidelines to assist the production of a Digital Storytelling application, identifying seven main elements in the structure of a story: point of view (stories should be personal and “authentic”), dramatic question (stories should tell something worthy), emotional content (stories should involve people), the gift of your voice (a way to personalize stories), soundtrack (which helps understanding and adds aesthetical value), economy (very often stories...
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