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Contact:

David Thornburg, dthornburg@aol.com (English speaker)

Renato Guedes Santos, renato.gsantos@gmail.com (Portuguese speaker)

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First Educational Holodeck in the World Announced in Brazil

On the evening of August 5, 2010, the creation of the world's first educational holodeck was announced to parents of children at the pre-K to middle school campus of *Colégio Atual*, a school in Recife, Pernambuco, Brazil. The holodeck is a bare room that, through custom interactive computer software and hardware, can become, for example, the flight deck of an interplanetary spacecraft. The holodeck first appeared in the science fiction series, *Star Trek: Next Generation*. As with so many other technologies, fiction fast becomes reality.

The purpose of this room is to create challenging missions in which children use their skills in the STEM (science, technology, engineering, mathematics) subjects to complete a journey. For example, on the way to Mars, the spacecraft may start to leak air, and the students need to design a way to repair the hole. The emphasis is on creative problem solving, not just demonstrating content knowledge.

The holodeck is a highly engaging example of an interactive, immersive environment. While the *Colégio Atual* holodeck will have furniture in it, all the interactive images on the walls are produced by computers. This means, for example, that the room can immediately change from being a spaceship to being a microscopic chamber allowing children to navigate through the human circulatory system – all by changing the room's software.

According to the educational holodeck's inventor, Dr. David Thornburg, "Once you are in the room and a mission to Mars is starting, you feel as if you are really on an interplanetary spacecraft. All the images and sounds and controls are designed to support the sense of being on-board." He goes on to say: "There are no passive observers in the holodeck. Everyone has tasks that are essential for the success of each mission. Think of it as a theater without an audience." The teacher plays the role of mission commander, not as content presenter. Students need to do their own research in order to be successful in this environment.

The physical holodeck is only part of the project. Intensive staff development helps teachers shift their roles toward a more inquiry driven, project-based approach to teaching.

The construction of the first educational holodeck is a joint project between the Thornburg Center for Space Exploration, Thornburg Center Brasil, and Água-Marinha, a Brazilian content developer. Renato Guedes Santos worked on the custom software and hardware for this project, along with Dr. Thornburg.

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About the Thornburg Center:

The Thornburg Center is an international educational consulting firm with offices in the US, Canada and Brazil. Their projects focus on new ways to use technology in K-12 schools, the development of STEM skills in children, and the encouragement of inquiry-driven project-based learning across the curriculum. Their clients range from individual schools to entire districts, and Thornburg Center members speak at numerous educational conferences, worldwide, each year. The Thornburg Center for Space Exploration is home to special projects in the STEM domain, including the design and construction of educational holodecks.

(www.tcse-k12.org)

About Água-Marinha:

Grupo Editorial Água-Marinha Ltda., headquartered in Recife, PE, Brazil, is dedicated exclusively to work in the area of education. Água-Marinha produces educational software, textbooks and digital multimedia applications. These important and modern tools facilitate and complement the work of teachers and provide a stimulating environment for students, increasing their interest in learning and facilitating the understanding of content inside and outside the classroom.

Organized in several teams working in an integrated manner, Água-Marinha has over 80 skilled professionals on their staff.

(www.aguamarinha.com.br)

About Colégio Atual:

Colégio Atual is a series of schools in the Brazilian State of Pernambuco with several campuses ranging from pre-K to high school. The school is celebrating its 25th year in September of 2010. Atual is home to several innovations in addition to the educational holodeck, including the development of an English-language program for the primary grades, a full program in environmental sciences, and the implementation of engineering courses in the early grades (through middle school).

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