

PRODUCT FEATURE

Cosmo's Learning Systems: An innovation in learning for children with and without disabilities

By Catherine Kaliniak

Cosmo's Learning Systems is an educational product designed to motivate children with and without disabilities to participate more fully in educational and therapeutic activities. Cosmo's Learning Systems consists of Mission Control, Cosmo's Play and Learn software (with program settings for individualization and detailed data collection), a curriculum guide, and magnetic manipulatives. Mission Control is an accessible computer interface device with four aFFx activators and a built-in microphone. aFFx activators are revolutionary new interactive tools. Cosmo's Play and Learn software's first title, Playground Discovery, is designed for children with a developmental age of three to five years and focuses on pre-literacy and pre-numeracy goals. The product is distributed by AT KidSystems, Inc.

Background

Cosmo's Learning Systems is the culmination of five years of research and development in clinics and schools by AnthroTronix, Inc., a research and development

company specializing in interfacing humans and technology. Through funding from the National Science Foundation, National Institutes of Health, and Department of Education, AnthroTronix developed Mission Control for children with disabilities. AT KidSystems, a subsidiary of AnthroTronix, was created to manufacture, market, and distribute the technology emerging from the research and development activities of AnthroTronix.

In 1999, Dr. Corinna Lathan founded AnthroTronix with initial seed funding to develop a robotic device (CosmoBot) that motivates children with disabilities to participate more fully in therapy (pictured on page 24). The robot is controlled by the child via an interface device outfitted with a microphone, eight simple binary (on/off) switches, and a joystick. The robotic system has been tested in classrooms and clinics in the greater Washington, D.C., area. Through measurable objectives, the data collected proved the success and feasibility of the system as a tool for therapists and educators in the clinic and classroom.

For more than five years, AnthroTronix engineers have worked with children, parents, and therapists to fine tune design parameters based on the needs of children with disabilities. This user-centered design process has yielded several innovations in the company's technology arsenal. For example, a physical therapist at Mount Washington Pediatric Hospital identified a need for a device that would assist her in isolating the supination and pronation actions of a child's wrist. After a needs and requirements document was formulated, a prototype was developed that plugged into Mission Control for use in controlling CosmoBot. The device housed a potentiometer in a circular plastic form with a platform for the child's arm. A child would rest their arm on the platform and grab the center bar while supinating and pronating. This device isolated the movement, allowed the child to "play" with CosmoBot, and provided the therapist with one more tool for this exercise.

A Department of Education grant allowed AnthroTronix to create an educational software

Address
526 Main St.
P.O. Box 68
Henderson, MN 56044

Phone
507-248-3294

Fax
507-248-3810

Web site
www.closingthegap.com

E-mail
info@closingthegap.com

This article originally appeared in the December 2005 / January 2006 issue of *Closing The Gap*, Vol. 24 No. 5.

Check us out on-line:

www.closingthegap.com/

Copyright © Closing The Gap, Inc. All rights reserved.

game for use in therapeutic and educational environments. Once created, the game was tested with end users and received positive feedback from therapists, teachers, parents, and children. The software game is controlled through Mission Control, the access device developed for children with disabilities. After the development of the software, the functionality of Mission Control was redefined.

Innovation of Mission Control

What we found during early testing with the software game was that traditional switches fall short in providing a truly interactive experience. In general, children with and without disabilities who do not use a standard keyboard or standard mouse cannot access interactive educational or rec-

reational software. We worked with children, educators, therapists, and parents to define and develop functionality for Mission Control that provides a higher level of interactivity with software products. The innovation in Mission Control that resulted was the development of the aFFx activators.

Mission Control has four aFFx activators and a built-in microphone. While regular binary switches provide a one click action, an aFFx activator provides multiple actions with one press. Consider as an analogy: an on/off light switch is to a binary switch (jelly bean) as a dimmer switch is to an aFFx activator. This new technology provides a greater number of children with broader access to more educational and rehabilitation software. The microphone also adds another

meaningful way for children to interact by using their voice to control the software. In addition, there are four ports in the front of Mission Control for the inclusion of a favorite switch (or switches) for children who prefer single switch use.

Cosmo's Play and Learn software

To complement Mission Control's unique functionality, AnthroTronix decided to collaborate with a children's software developer, 360Kid, in Newton, Massachusetts, to create an educational software program. 360Kid has been nominated for several Emmy awards for children's television in recognition of their outstanding work in children's interactive media.

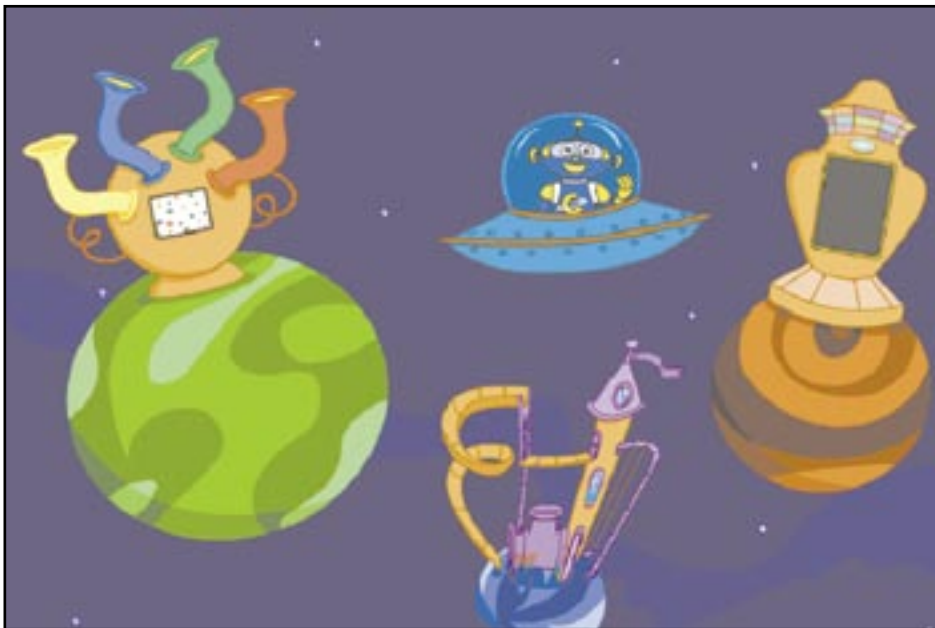
AnthroTronix created a content team to develop the educational scope and sequence. In coordination with 360Kid, the first title in the Cosmo's Play and Learn software suite, Playground Discovery, was developed. The content team consisted of an occupational therapist, speech language pathologist, educational curriculum specialist, disability advocate, and engineers. This team developed the curriculum scope and sequence, activities, and curriculum guide, as well as designing the magnetic manipulatives. The team focused on a pre-literacy and pre-numeracy scope and sequence for children with a developmental age of three to five years. While highlighting the functionality of Mission Control, they created a very compelling and motivating graphic environment. The content was designed for use in a school or clinical environment to work on educational and therapeutic goals.

The curriculum guide is a tool for educators and therapists that describes each activity, explains learning objectives, and offers a host of pre- and post- school or clinic environment use, and at-home activities to reinforce educational goals presented in the software.

Cosmo's Learning Systems also includes magnetic manipulatives for pre- and post-play. An 11- by 17-inch white, magnetic board comes with more than 30 magnetic pieces from the Playground Discovery software program.

Individualization and data collection

Cosmo's Learning Systems can be adapted to each individual child based on specifications established by the educator or therapist. Features include, but are not limited to: text



Mission Control software.



Mission Control has four aFFx activators and a built-in microphone.

This article was originally published in **Closing The Gap**. For more information visit www.closingthegap.com

Copyright © Closing The Gap, Inc. All rights reserved.

labels, on-screen Mission Control prompts, sound effects, timing of inactivity prompts, sound activation, etc.

Comprehensive data collection can be tracked for each child by session and across sessions. Data tracked includes time on task, number of prompts needed to successfully complete a task, maximum and minimum duration of activator presses, and number of appropriate responses.

Why children need this product

This product breaks down barriers for children who do not use a standard keyboard or standard mouse. The unique interface and educational software are essential learning tools for the classroom and in the clinic to ensure that no child is left behind.

Press the Future!

For more information, please contact Charlotte Safos at AT KidSystems at 301-495-0770, ext. 347 or e-mail: <csafos@atinc.com>. Find out additional information at <www.atkidsystems.com>. This product retails for \$799 and includes Mission Control, Cosmo's Play and Learn software titled Playground Discovery, a USB connector, curriculum guide, and magnetic manipulatives.



CosmoBot motivates children with disabilities to participate more fully in therapy.