

VideoGameWorks

by Michael Tempel and Hope Chafii

Kate was working on a computer game. Dogs were running, birds were flying, messages were popping up, questions were being asked, and music was playing. She wasn't just playing the game. She wrote it. It was January and she wasn't scheduled to take computer until April, but she had learned what she needed to know from friends who had already taken the course.

A group of students corner their teacher in the stairwell to tell her about a bug in their program. Another wants to know why the timer isn't working in her program.

Four students are grouped around a computer watching intently as a fifth tries to maneuver a fast-moving turtle through a winding maze. His fingers move rapidly around the arrow keys as he tries to avoid going into the wall. He fails and is sent back to the beginning of the maze. One boy in the group is quite pleased. He is the author of the program and his creation has remained undefeated.

These students are thinking a great deal about what they are doing. They are involved. Educators have long taken advantage of children's passion for games, and especially for computer games. The usual approach is to overlay some educational content onto a familiar game format. To reach the next level you must answer a question about history or calculate a sum.

We don't ask our students to design games that focus on a school subject. They choose what the games are about so the objective is more likely to be conquering space aliens or getting a date than solving a math problem or getting to the West Coast.

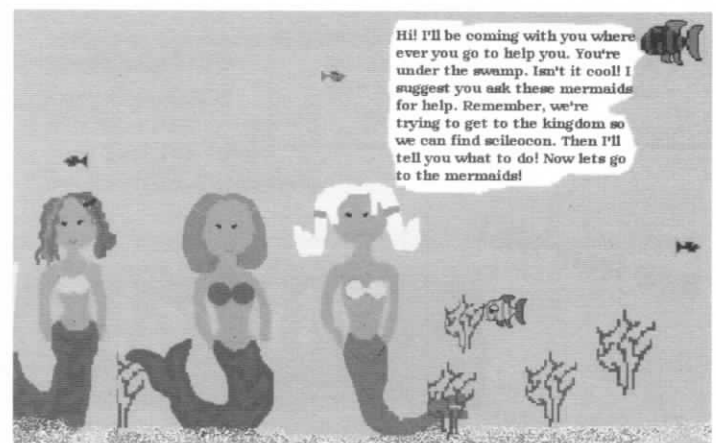
We follow in the tradition of Idit Harel¹ and Yasmin

Kafai² of the MIT Media Lab, recognizing that more profound learning comes from designing and building the games than from being on the receiving end.

The Settings

We have been working with students on computer game projects for several years at the Spence School, an independent school for girls, and at Computer School II, an alternative public middle school, both in New York City. We have also shared our work with other teachers in workshops on game programming and as part of the annual Logo Summer Institutes sponsored by the Logo Foundation.

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Ask the mermaids for advice. They can help you find your way around Stephanie's adventure game.

LCSI Introduces MicroWorlds Pro

The latest release from Logo Computer Systems offers a long list of enhancements and new features while retaining all the capabilities of the current MicroWorlds. There are more shapes and improved drawing tools. Hyperlinks to World Wide Web sites may be inserted in projects. MicroWorlds Pro interacts with Microsoft Office products. Data can be read from Excel worksheets and written to them. Word's spelling checker works in MicroWorlds text boxes.

But the biggest improvements are in the area of program development and debugging. You can now look at your procedures page and a page in your project at the same time. There are two new windows that give you a fuller picture of what is going on. Clicking the Project tab opens a window with a graphical representation of the structure of the project. First you see a list of pages. Click on the + sign next to a page and a list of the page's objects appears.

Many of the objects also contain information: the instruction in a turtle or button, the URL of a hyperlink, or the range and current value of a slider.

A click on the Processes tab opens a window that shows the processes that are currently active. And if things are moving too fast for you to follow, you can cause Logo to run in slow motion.

"Teachers and students can use MicroWorlds Pro to enhance their understanding of MicroWorlds and to get a real sense of the depth and breadth of this powerful multimedia programming environment," said LCSI President Michael Quinn.

MicroWorlds Pro is available for Windows 95/98 computers. LCSI is reported to be giving serious consideration to the development of a Macintosh version. MicroWorlds 2.03 will continue to be supported and available for both Windows and Macintosh.

Logo Foundation

250 West 85th Street
New York, NY 10024
Telephone: 212 579 8028
FAX: 212 579 8013
email: michael@media.mit.edu
http://el.www.media.mit.edu/
logo-foundation/

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**Calendar of Events****The 1999 Logo Summer Institutes**

Take some time this summer to focus on *your own learning*. Join us for a week or two of Logo exploration and creation.

Logo Immersion

New York: June 28 - July 1
Colorado: July 19 - 23

Logo Robotics

New York: June 14 - 18
Colorado: July 26 - 30

For more information fill out and return the response form at the bottom of the next page or visit the Logo Foundation website at:

<http://el.www.media.mit.edu/logo-foundation/>

EUROLOGO '99

Seventh European Logo Conference
Sofia, Bulgaria August 22 - 25

For information contact:

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FMI Room 212
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eurologo99@sparc10.fmi.uni-sofia.bg
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Logosium

NECC '99 preconference workshop
Philadelphia - June 21

For NECC registration go to:

<http://confreg.uoregon.edu/necc99/>
For Logosium information contact
Gary Stager: gstager@pepperdine.edu

Stonington Retreat

Stonington, Maine
June 27 - July 2 and July 5 - 10
For information contact
Laura Allen: laurallen@aol.com

New from LCSi!

MicroWorlds Pro™

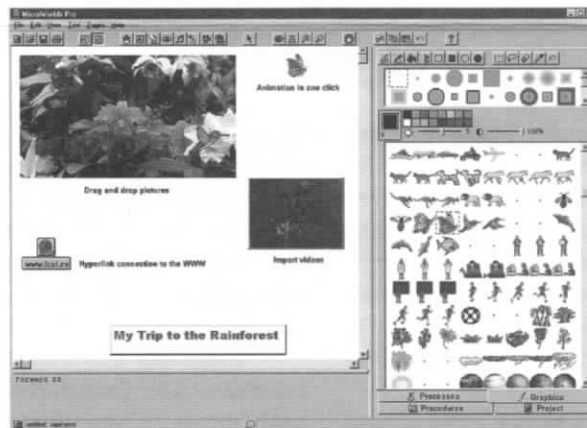
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Requires Windows 95/98

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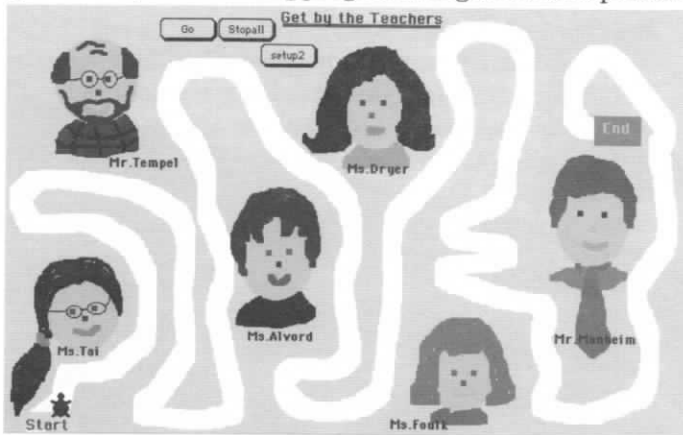
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The computer classes develop into active collaborative design studios. Most students are quite willing to help each other, although some form groups that harbor secrets. Since the students are motivated to improve their games, there is a drive to learn new skills and acquire information. It's a pleasure to have them gobble up new ideas and techniques. Whole class lessons are rarely needed or appropriate. We often teach something to one student knowing that it will be all over the class in short order. Or, we place a sample project or starter in a public folder on the network and students take it as they need it.

What We Want to Achieve

What are our students learning? There are basic language and math skills that are practiced and improved while building games. Instructions have to be clear. Calculations of distance and angle are needed to lay out a game and move characters around. They are learning to plan and organize a large project and to appreciate another's point of view, that of the person playing the game. They are learning programming and the important



How well can you maneuver around the teachers in Elizabeth's maze game?

skill of debugging.

As teachers, we have our criteria for judging our students' work. But what drives them most to high achievement is the judgment of their peers. Games should be complicated and difficult, but fair and possible. It should be clear what the goal is and what you have to do to maneuver your characters. Games should be clever, tricky, and funny. They should be aesthetically pleasing. And they should be fun.

References

- 1 Harel, Idit, *Children Designers*, Ablex, Norwood, NJ, 1991
- 2 Kafai, Yasmin, *Minds in Play*, Lawrence Erlbaum Associates, Mahwah, NJ, 1995

A longer version of this article appears in *Logo Update On Line* Vol. 7 No. 2 on the Logo Foundation Website at

<http://el.www.media.mit.edu/logo-foundation/>

It includes more detailed information about how we worked with students to develop their games along with the sample programs and project starters we used.

Stephanie's adventure game, Elizabeth's maze, and other student-made games may be found on the VideoGameWorks Website at

<http://el.www.media.mit.edu/logo-foundation/VGW/>

Michael Tempel is President of the Logo Foundation. He taught at Computer School II from 1996 to 1998. He may be contacted at:

*Logo Foundation
250 West 85th Street
New York NY 10024
michaelt@media.mit.edu*

Hope Chafian is Director of Technology and Curriculum at The Spence School. She may be contacted at:

*The Spence School
22 East 91st Street
New York NY 10128
Hope_Chafian@spenceschool.org*

Read *Logo Update On Line* at

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250 West 85th Street
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