...*New Books continued from page 9*

definitive statement to date of this approach to media and education research and practice. The book is structured around four major themes: Learning through design and programming; epistemological styles in constructionist learning, children and cybernetics, and video as a research tool for exploring and documenting constructionist environments.

This book contains four new articles authored or coauthored by Seymour Papert and numerous other articles by Idit Harel, Mitch Resnick, Steve Ocko, and other members of the Media Lab's Learning and Epistemology Group.

The second new book from Ablex Publishing Corporation is by Dr. Idit Harel and is concerned with children's construction of mathematical ideas - in this case fractions. Her research is a must-read for math educators.

Children Designers: Interdisciplinary Constructions for Learning and Knowing Mathematics in a Computer-Rich School. By Idit Harel (MIT Media Laboratory)

In this book the author describes a new vision of learning through design and production and of computer programming as a source of learning and design power. As a means of studying this extended notion of children's programming, the author implemented "Instructional Software Design Projects" to explore the learning that takes place when students develop complete mathematical software products designed for other students in their school. It was found that the young designers learned not only about mathematics (fractions) and programming (Logo), but also about design and user interfaces, as well as representational, pedagogical, and communicational issues. This approach represents a new paradigm for computer-based activities in schools.

...*Tower of Hanoi continued from page 3*

What is the minimum number of moves for 3 disks? 4 disks? etc.? Can you discover a rule?

In his book, Al Cuoco includes procedures that list all the moves for a given number of disks. Here are the procedures:

```
to do :disk.stack :source :target
:other
make "count 0
move :disk.stack :source :target :other
print []
print (sentence [This took] :count
[moves.])
end
to move :disk.stack :source :target
:other
if one.disk? :disk.stack [make "count
:count + 1 print (sentence "move
:disk.stack "from :source "to :target)
stop]
move highest :disk.stack :source :other
:target
move lowest :disk.stack :source :target
:other
move highest :disk.stack :other :target
:source
end

to one.disk? :stack
output (count :stack) = 1
end

to lowest :stack
output (list last :stack)
end

to highest :stack
output bl :stack
end
```

My animated version will be offered as one of the Clime Microworld III programs which will be out in June.

Ihor Charischak is the Founding Editor of the CLIME News and the President of CLIME. He is currently a Program Coordinator for the Stevens Institute of Technology's Center for the Improvement of Engineering and Science Education

Articles and MicroWorlds Wanted!

Please send us articles, letter to the editor, and microworlds in computer-ready form on disk, preferably in Macintosh format. We can however convert ASCII MS-DOS and Prodos files sent on 3.5" disks. We are planning our next *CLIME Microworlds* issue for a June, 1992 publication. We will publish microworlds created in Terrapin Logo, LogoWriter/LogoEnsemble, LEGO TC logo, and Object Logo. Please submit microworlds in as many dialects as possible. The next *CLIME News* will be published in early April, 1992.