Ever since he was born 13 years ago, Kathleen Nash has known that her son Michael, a severe spastic quadriplegic, would someday be able to communicate and perhaps even earn a living for himself.

"Computers would make it happen, she has thought.

"That's what is going to open the whole world up to him," she said. "I've always had the vision of him finishing school, going to college and doing something in the technical world. Technology is going to allow him to.

While the development of new personal computers and software captivates many people, few follow as closely or depend on the machines as much as the disabled. Over the past 15 years, advances in PCs have provided new ways for interaction to people with hearing, sight or motion disabilities.

Now the time has come for Michael Nash.

Just a few months ago, professors at Boston College chose him to help test electrodes that attach to the area around the eye, the portion of his body he can control, so he can run a laptop computer.

The results are promising. Michael, whose intellect has not been affected by his physical condition, for the first time is communicating with words rather than looking up or down in response to yes or no questions.

"We hope to have the computer in our home this summer. It's the beginning of dreams come true," Mrs. Nash said. "It's given Michael his voice. It's given him everything."

There's no comprehensive data to indicate how many disabled people are using computers. But one indication of their importance came in a 1989 study by the American Foundation for the Blind, which found that 30 to 50 percent of Americans who are blind or have a severe visual impairment write with a PC. Usage varied by factors such as age and education and is believed to be higher now.

A substantial industry has grown from companies that create programs and adaptive devices for the disabled to use computers. These can range from a plastic shell over a keyboard, allowing a person with shaky hands to hit the right key, to software that audibly identifies the icon a cursor is on for a person with poor vision.

"Most adaptive technology is sold through small businesses that specialize in technology for various disability groups," said David Kostyshyn, president of Syntho-Voice Computers Inc., a Hamilton, Ontario, company that created a way for the blind to use programs run by graphical icons rather than text.

A notable exception is IBM, the largest computer company, which created a division focused on the disabled eight years ago. It provides a broad array of adaptive products, including some free software for running a PC's basic functions and some products created by other companies.

The division also patrols other IBM developers to make sure they're not producing something that couldn't be used by someone with a disability.

"As new technology evolves, my team is constantly watching to make sure we're not doing something to leave the disabled behind," said Dennis O'Brien, product manager for special needs systems at IBM. "The second thing is to see if there is new technology that could be applied to the disabled."

The latest versions of IBM's OS/2 and forthcoming Windows 95 from Microsoft Corp. carry standard features that let people change the appearance and magnification of a screen, give visual feedback to the hearing-impaired and put all the actions of a mouse or cursor control onto the keyboard.

Both companies have been trying to overcome the troubles the disabled have encountered because of the industry's shift to graphically commanded rather than text-driven programs.

"That did set back the blind community for several years," O'Brien said.

Microsoft has faced complaints by creators of software for the disabled that portions of Windows code was difficult for them to use and, thus, adapt to their audience.

The trouble should be fixed with Windows 95, said Brad Silverberg, senior vice president of Microsoft's personal systems division.