A Story about Learning

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Let me tell you a story. It has three parts.

1989 (this really happened)

Mary, twelve, went into a public library in Irvine, California, in the United States. She was looking for books to read. She noticed a device that looked like a television set with a typewriter keyboard. She sat on a chair in front of the screen. There are some pictures on the screen and text. It said, press any key to begin. Just as she did that, John, 11, started watching.

A question appeared on the screen about thermometers. John became interested and sat down. Mary typed an answer, and more questions followed: ‘How long do you leave it in your mouth for accurate temperature reading.’ Mary and John discussed this, and then Mary typed ‘I would leave it in for several minutes’. The message on the screen agreed with her, and another question was presented. The questions were frequent, every few seconds.

This process continued for some time, with questions followed by typed responses, both in ordinary English. They were absorbed with the process, and often talked about what to respond to a question. Sometimes John did the typing. It was like having a conversation with a knowledgeable friend.

Mary and John could have left at any time they were not interested. No exam was going to follow, as their teachers did not even know they were using this material. But they stayed for a long time, until Mary had to go home for supper. When they did leave, they agreed to continue where they left off, so they arranged to meet again the next day. They were playing a constantly active role in creating their own knowledge.

A few days later they used other learning programs. One helped them discover the laws of genetics, one the laws of simple electric circuits.

2003

Laboratory xyz announced that it is conducting a global experiment in highly interactive tutorial learning, through the use of the computer, to determine if this method should be widely employed. Several cultures and languages will be involved. The experiment will include very poor students. Both distance learning and classrooms will be tried. Thousands of students will participate.

The primary mode of interaction will be through questions from the computer, and free-form answers from the student, all in the students’ native languages. Both voice and typewriter input will be used, so that they can be empirically compared. Student responses to these questions will be in intervals of less than twenty seconds.

Almost all students will be successful learners. The results of the experiment will guide future development and delivery of material in many other areas of learning.

2020

We are in the center of a town in India with about 100,000 people, in a room that contains many screens that again look like television sets. But unlike the library in Irvine, there are no keyboards. Many people all ages are in the room intently interacting with the material on the screen. The interaction is entirely by voice in the native language of the students, except when they are learning another language.
Again as in Irvine students are free to say anything they wish, and they do.

Their slightly older brothers and sisters bring Maya, Asha, and Gopal, each four, to the center. This is their first visit.

They sit down at one of the screens, and begin a voice-based conversation: The learning device talks to the students, mostly asking questions, and the students talk to the learning device, answering the questions. Our three young heroes sit down, and often discuss what they will say.

The learning aid asks the children what their names are. Then it suggests that Maya tell a story. Children love to tell stories. As the child tells a story print appears on the screen in the child's native language. These young children may not know how to read. Pictures illustrate the story. The learning device adds periods where appropriate. We are beginning even in this early stage both to get children to write, and to understand the connection between speech and the funny symbols that appear on the screen.

The learning device asks the student to read back the story, determining just what they can read. The learning aid reads back the story slowly, using the voice of the student, and other voices, emphasizing each word on the screen as it is read. The story will be presented again to the student.

Our students come back often, eventually learning to read and to compose stories and other documents. Student information is saved frequently, and used in the dialog. Occasionally the learning device suggests that they work with other students, so they become familiar with many children.

There are many groups in the room, working on many things. Some learn about nonviolent ways to resolve disputes. A group of 10-year-olds is learning to differentiate a function. An older group of children is working on quantum electrodynamics. Some are learning how to build and operate a small factory. Several 80 year olds are striving to understand Beethoven's ninth Symphony.

No one is in charge. The room belongs to the learners. Learners work on a topic until they succeed in learning, as determined by the learning device. Since all succeed, no tests and grades are given. Any subject is possible at any time and at whatever pace the students want or need. The learning device assists with choosing new subjects based on what is known about the student. If more learning devices are needed, because of heavy use, they are shipped automatically.

The learners mostly work in groups of about three or four. They come and leave when they want to; they are free learners, working because they are in a highly interactive motivating environment, and because they have always enjoyed learning. Many of the children spend much of the day in the center. They may also work on projects outside the Center. If special help is needed, the learning aid suggests several people to assist, and asks those people if they are willing, when they are in the Center.

The learners in this village understand that learning is a lifelong process. They love to learn. Even at a young age they understand the power of learning, and this encourages lifelong learning.

Their own village has changed greatly since the learning aids were available. Everyone has a comfortable place to live, enough food, and enough water. People enjoy life.

They know too that billions of people on earth are engaged in similar activities, and they understand this helps them avoid violence, and to help solve the major problems of the world, such as too many people, poverty, and limited food and water.

This story was dictated with Dragon NaturallySpeaking Version 5. Thanks to Stephen Denning, George Leonard, and Arthur Clarke.

For details see Tutorial Distance Learning -- Rebuilding our educational system, by Alfred Bork and Sigrun Gunnarsdottir, Kluwer, 2001.