

# Computer And The Third World

— Robert Charbonneau

**SENEGAL.**— In the West the idea is simply to get as many people as possible to learn how to use computers. In the developing countries however more basic questions are being asked. How precisely is the computer challenge to be met? How is the computer to be used, and in what context? Is the technology to be adapted to the users or must one simply take it for granted that the computer brings with it a dose of cultural colonialism?

There are those who believe that the Third World can bypass industrialization and leap ahead of the West by committing itself wholly to the world of high-tech information. Others however point out that computerization in the countries of the Third World has no

other goal than to enlarge the market for the multinationalists that control data systems.

In Senegal, in West Africa, the ministries of Scientific and Technical Research and of National Education have paid particular attention to the work of professor Seymour Papert at the Massachusetts Institute of Technology in Boston. Up until the end of 1982 Papert was director of the World Centre for Information Systems and Human Resources in Paris, an organization supported by the French government.

Professor Papert is known for having developed a computer language that is grounded in one of the principles of the great Swiss psychologist, Piaget. This principle is simply

that children are responsible for their own learning.

The language, called Logo, tries to develop the child's capacity for self-learning.

Papert is convinced that any young child can learn a language more rapidly and more spontaneously than any other subject thereafter. "Learning without instruction is possible" he asserts.

In March 1982 a group of trainees made up of a computer expert, a professor of mathematics, an educational psychologist, a sociologist and two teachers at Dakar's Normal School, decided to experiment with different ways of teaching data processing to children between 7 and 11 from different social classes.

The Logo language allows the

child to call up on the screen an abstract form of a turtle and to control it at will depending on the instructions given him. Then as he learns more, he fills the turtle's environment with geometric forms representing a square, a sun and other elements made up from simple forms. The child's learning becomes dynamic. It is not the computer that is programmed for the child rather it is the child who discovers the machine's language and programme.

The first results indicate that children from a more privileged background learn more quickly at first. But children from underprivileged backgrounds, and even very poor backgrounds eventually close

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the gap.

At the Ministry of Scientific and Technical Research the working group has set out to compile all the children's accomplishments and the necessary knowledge involved. A second study is analysing how learning takes place and is utilized by children in the same age group, and in different age groups. In the end it will mean proposing different learning methods to the legislators.

French thinker Jean-Jacques Servan-Schreiber in 'Le défi mondial' (The World Challenge) published in 1981 argues that the computer will revolutionize communications in the countries of the Third World. The computer, because of its flexibility, its immediate recall and its simplicity is believed capable of profoundly modifying ways of thinking.

"Those who will have learned the thought structure of Logo will be able to meet and find solutions to the problems they have in common," says Schreiber. Farmers in the Third World, for instance, could keep data on their food stocks and thus better manage their resources.

Schreiber goes further. He asserts that the very fact of experimenting with a computer means a more flexible attitude that could result in Third World farmers bridging the gap between modern agricultural knowledge and their traditions.

The next step would be natural for Schreiber. Communities could be linked by satellites and share their knowledge over great distances. There is already research underway to develop compact and reliable micro computers for use in the remotest corners of the world.

Not everyone agrees with Schreiber.

Some see his computer advocacy as naive and riddled with underlying economic interests which barely disguise a desire to perpetuate colonial relations.

For the moment computer technology is not yet accessible. Illiteracy remains a serious obstacle when the keyboard controls the computer. Research now underway in schools indicates that the computer just as speech and writing, have strong cultural connotations. And the translation of software packages is only a partial solution to the problem of computer use in developing countries.

Whatever the outcome Third World governments such as Senegal's are resolutely involved in current research. It remains to be seen if the use made of this advanced technology will really help the development of the people of the Third World. Papert himself admits that computer technology is not the solution to all ills.

"This technology can create small enclaves where development will be so rapid that it will necessarily take place at the expense of everything else around," says Papert. "The result in these countries could be an even greater disparity among social classes."

As anything new, the Logo language has met with and continues to meet doubt. On the one hand, its implementation profoundly modifies the role of the teacher.

On the other there is concern that the child is not sufficiently taken into consideration in these experiments. The teachers believe that it would be preferable to set precise goals for the project, to involve different government ministries if necessary, and to set up a module to provide guidance. And then, such experiments should not impose a financial burden on an already costly

educational system. This could be the determining factor in the end even if the price of computers continues to fall.

The Government of Senegal is convinced that the computer will become an integral part of the school system whether one likes it or not, now or later. And so there is a commitment not to miss out on the computer revolution. And as an added means of ensuring this the government has just had Wolof, one of the six national languages translated for the computer.

Many observers postulate that the computer will mean closer links among the different cultural groups in the world. But not Papert. He is convinced that alternative cultures will result from the use of the computer. Minority groups, women poets and so on will claim the micro computer for the defence of their own interests and cultures. Only the future will tell what impact the computer age will really have on the development of the Third World. But whatever it is it will be profound (IDRC Feature).

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