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Soviet Education And Computers

—Valeria Prut

THE first experiments in introducing computers in schools date back to the late 50s. Academician Andrei Ershov of the Siberian branch of the USSR Academy of Sciences, a young scientist at that time, was an initiator of this experiment. For several years under his leadership the fundamentals of programming were taught at several schools in Novosibirsk (Western Siberia).

In the early 60s, this subject was added to the curricula of specialized mathematics schools in Moscow. The Mechanics and Mathematics Faculty of Moscow University supported the initiative by organizing optional studies in programming for senior pupils. Several universities in other cities of the country followed suit. However, lack of technical facilities in those years made a mass-scale introduction of programming impossible. Schools had neither computers nor trained school instructors, programming was mainly taught at the computer centres of research institutes and universities.

In the late 70s the development of microprocessors opened a new state in the development of Soviet computer technology which made it possible to tackle directly the question of giving the rising generation the necessary knowledge of computers.

To solve this problem it is necessary, first, to manufacture computers and, second, to ensure the rediness of the general school to work with them (compile curricula, train instructors, etc.).

This, in turn, sets education two tasks: to teach pupils how to handle computers and raise, with their help, the level of instruction in all other school disciplines.

Here the largest difficulty is the magnitude of the task: all of the 140,000 Soviet general schools must be provided with computers. This can be done gradually, in three consecutive stages. It should be stressed that the use of computers in schools is regarded in the USSR as a component part of the state plan for the country's economic and social development. Therefore, the three stages should fit in with the country's five-year plans, namely, the 12th 13th and 14th.

At the current, first, stage (1986-1990), most school-children will be given a general educational background in the subject. They will be taught the principles of computer operation and the fundamentals of programming, i.e. they will be psychologically prepared to operate a computer.

The second stage of computerization of education will cover the period 1991-1995. Here the main tasks are to introduce all senior pupils to a course of information science with the use of standard study computers and with their help to raise the effectiveness of teaching all other general educational disciplines.

At this stage, the fundamentals of information science will be taught in the lower classes. Schools will have second-generation study computers. Teachers, never mind the subject they teach, will undergo retraining.

In the second half of the nineties the fundamentals of information science will be studied in all Soviet schools, beginning with junior classes. This will distinguish the third stage of computerization of education (1996-2000). The role of computers in the study of all other disciplines will grow to such an extent that the course of information science will become an integral course fundamentally changing all teaching methods.

(APN)