# Computers in Soviet Schools

*A quickly organized, ground-breaking international conference
in the Soviet Union on computers and education
yields a surprise or two and opens the door on a bit more.*

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In October 1988, the Association for the Development of Computer-based Instructional Systems (ADCIS) and the Academy of Sciences of the Soviet Union jointly sponsored a conference on "Children, Computers, and Education" at a retreat outside of Moscow. About 35 American and Western European delegates and at least an equal number of Soviets and Eastern Europeans attended. The conference was organized rather quickly, but despite logistical problems, including a last-minute site change, the conference, the first of its kind, proved to be a valuable interchange. The Soviets were eager to hear about our work and to share their own experiences.

## USSR 10 YEARS BEHIND

In the week prior to the conference, the delegates visited schools in Leningrad and Moscow where computers are being used in education. There was little evidence of computer-assisted instruction in the schools we visited. We did, however, see students of junior high school age writing rather impressive short programs to, for example, determine whether the roots of a quadratic equation are real or complex and draw pictures with a Logo-like turtle. It is clear that Soviet students' love affair with interactive computing is certainly similar to that of their Western counterparts. Except for the language barrier and the extraordinary discipline of the classrooms, the scenes we saw could have taken place here as easily as there.

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The conference delegates from the Soviet Union repeatedly expressed the thought that they are at least 10 years behind the United States in academic computing. As in other instances in which we are ahead, however,
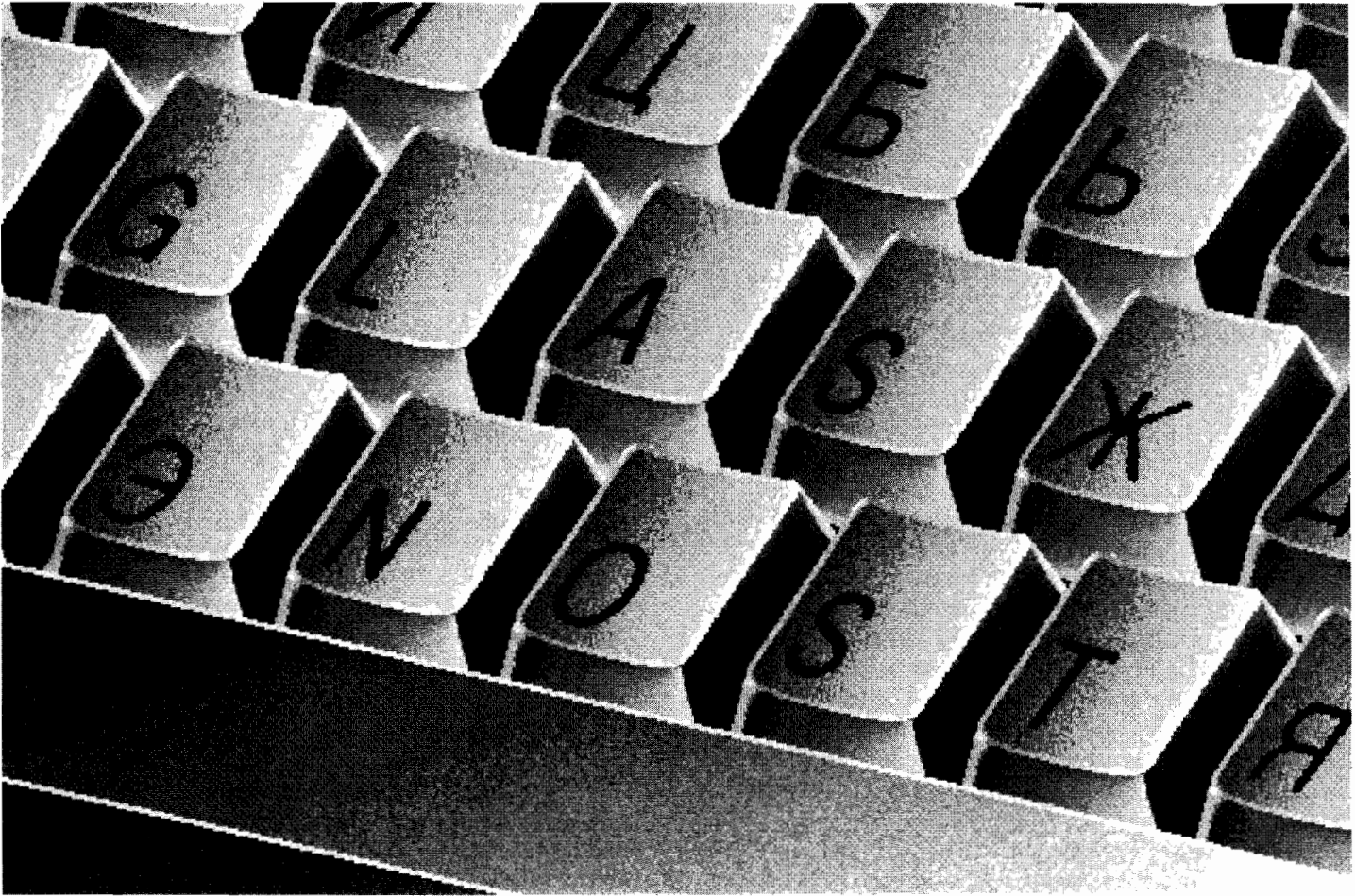
they seem to have an uncanny sense of learning and applying the best of what we have done. The centralization of Soviet society makes change a slow commodity, but once a plan is adopted, implementation appears to take place across the entire country. *Glasnost* and *perestroika* have made discussion of change a popular activity which is now practiced openly and fervently. While the availability of consumer goods continues to lag far behind what people desire, the progress made by the intelligentsia over the last four years in mobilizing the country toward educational applications of computers is impressive.

The main speaker at the conference, Professor Alexei Semenov of the Academy of Sciences, told us that the Soviets taught programming in specialized schools as far back as the 60s, but that even in the 70s they were still working in an experimental mode with various systems and languages. In 1984, the Politburo and Council of Ministers adopted a resolution to implement computer education in all schools throughout the country. The first text was produced in 1985, but it was not supported by teacher training. Four million copies were printed, but it was not adopted in all schools. We learned that one of the major educational manifestations of *perestroika* is the

emergence of divergency in Soviet schools. Previously, programs were rigidly tied to texts and curricula that were chosen by a central committee. It is now more common for such committees to set educational goals and to leave the details of the curriculum to local educational authorities.

Professor Semenov said that the first educational software started to appear in schools in 1986, along with the first formal teacher training programs. At this time, there were approximately 10,000 computers in Soviet schools, a very small number considering that there are more than 100,000 schools in the USSR. The Soviets hope to have 1,000,000 computers in their schools by 1990. Most of the computers we saw in schools were Apple II clones, but we did see some IBM PC clones and even some ancient LSI-11 clones. We did not get a feel for which machine will become the Soviet standard.

### A SURPRISE AT SCHOOL 67

The most rewarding part of the trip was visiting Soviet schools before the formal conference. My roommate for the trip, Steve Robinson of the Amherst Wilder Foundation of St. Paul, Minnesota, and I struck out on our own rather than staying with the group tours.

Steve wanted to visit a typical school rather than one of the show schools we were taken to as a group. So as we lunched on ice cream and cakes from a small kiosk, we walked up to a girl in a school uniform and asked her where her school was. She directed us to School 67, which turned out to be quite extraordinary.

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We walked into the school, talked to a few students, and then decided we had better proceed to the director's office before we looked around. The director, Evgeny Semenovich Topaler, was quite surprised we had picked his school out of the blue, but was proud to show it to us. In a very short time it was easy to see why.

School 67 is a testament to dedication and hard work. First, Mr. Topaler has gotten some friends of some friends to help him decorate the school, and its walls are covered with bright paintings of children involved in school activities. As soon as we entered each classroom, all the pupils stood immediately, even before we had been introduced to the surprised teachers. The teachers were pleased to have us visit and eagerly showed off their students' work. We visited a English class of 15 year olds who spoke the language beautifully. They eagerly asked us questions about everything from the American perception of *perestroika* to the American musical groups currently enjoying the most popularity. We talked and laughed and the class made us feel right at home. Steve passed out Minnesota state pins (pins are a popular collector's item in the Soviet Union), and the students invited us to visit them again.

Mr. Topaler showed us the school's computer room, in which a class of students who had selected the literature "stream" (a type of high school major) were learning to write simple programs in BASIC. When the Soviets decide that everyone should learn to use computers, they do mean everyone. The teacher told us these students use the computers for two to three hours per week, while those who had selected technical streams use them for seven to ten hours per week. We were able to help these students a little, and they were genuinely interested in their work.

Our final classroom visit was to the literature class of Lev Sobolev, who was the subject of a February 17, 1988, article in the *New York Times* ("Soviet Students Now Asking Why?," by Felicity Barringer, page B8). Mr. Sobolev was teaching about a poem, and he had brought in a musician to show how the poem had been set to music. The adjunct teacher sang and accompanied

himself on the guitar as he held the students speechless. It was good, creative instruction.

We asked a staff member whether this really was a typical school we had happened to walk into, and he told us that it indeed was a typical school, but with an atypical director. Just like home. Later, we learned that this exceptional school had been recognized by being chosen as one of the participants in the Academy of Sciences' "School-1" project to reform Soviet education.

## RELEARNING AN OLD LESSON

One of the most visible ramifications of *glasnost* is that the Soviets are letting many more of their people visit the West and are giving us access to a wider range of Soviet life when we visit. The Soviets are not very different from Americans. They work and play and love and hate just like us. The Soviets have a very strong sense of family, similar to that which one sees within homogeneous ethnic groups in the United States. The love for their children is evident in all aspects of Soviet life.

The major lesson of the trip was one I had learned before: that one must not confuse a country's government

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with its people. In 1970, I was a teacher at the Anglo-American School in Moscow and was driven to the school each day by a Soviet chauffeur. My favorite driver was Valery, because he was always willing to help me with my Russian. One morning he was helping me to understand an article in *Pravda* that was very critical of the United States. When I finally understood what had been written, I said, "Well, I guess you don't like me very much today." Valery quickly replied, "Oh, no, Jesse, I like you just fine. It's my government that doesn't like your government!" □