Computer education in Poland

Technology in the Classroom

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The Polish education system lags behind in terms of the number of computers in schools, access to the Internet, and teachers' computer skills. New programs are now being implemented to better prepare young people for the modern job market

Research carried out among employers concerning the standards of professional qualifications has shown that computer-related knowledge and skills are components of so-called "supra-professional qualifications," meaning qualifications shared by all the basic groups of professions and specializations. This means that computer education is beginning to represent a civilizational challenge. It also poses a research challenge: the past few years have seen a considerable increase in the number of studies devoted to the application of computer technologies in the education process.

These studies are twofold in nature. Firstly, some are diagnostic studies that investigate technical infrastructure (the number of and type of computers present, the available Internet access), didactic software and teaching materials possessed by schools, as well as the computer skills possessed by teachers. These studies also analyze the level of students' competency, their personality traits, and the relationship between the application of computers as didactic instruments and working tools on the one hand, and the aims, syllabus, and methods of teaching on the other. Research of a second category tries to identify the desirable direction of change and the corresponding decisions that need to be made concerning computer education.

Krzysztof Kaliński

Data show that there were 32 pupils per computer in primary schools in Poland last year

Schools poor in computers

Diagnostic data from the 2002/2003 school year concerning the computer resources of Polish schools paint the following picture: 65% of primary schools and 37% of vocational schools and special-profile high schools are equipped with computer workshops (with a minimum of 8 computers). The situation was considerably better among middle schools and general-profile high schools, at 93% and 95%, respectively. At the same time, the average pupils-per-workshop ratio was more than 300 for all the various types of schools: ranging from an average of 304 pupils per computer workshop at primary schools, to 331 pupils at vocational schools and special-profile high schools. Research also investigated the number of pupils per individual computer, with the resulting figures being 32 pupils per computer in primary schools, 29 in middle schools, 25 in vocational schools and special-profile high schools, and 23 in general-profile high schools.

Access to the Internet also varied: from 60% to 90% of computers had an Internet connection, depending on the type of school.

Research from 2002 and 2003 into teachers' skills at operating computer equipment and their ability to apply computer technologies in the teaching process indicate a relatively low level of familiarity with computer techniques, since some 45% of all teachers reported that they had only a basic ability to operate a computer. Only one quarter of all teachers believed that they were able to apply computer technologies in the teaching process, while only 11.6% of all teachers reported that they do in fact utilize computer technologies in the teaching process. It is evident that fundamental differences exist between knowing how to operate a computer, being able to apply computer technologies in teaching, and actually applying them in practice.

The "Internet in Schools" program

Analyzing decision-making issues in connection with computer education involves identifying the differences between the current state of affairs in the country, as pinpointed by diagnostic studies, and the planned (or "target") state of affairs. These differences result from limitations in computer hardware and software, the lack of a sufficient number of well-trained teachers, and a shortage of professionally prepared teaching materials. On the other hand, identifying the desirable "target" status of computer education in Poland is hampered by a lack of forecasting studies predicting the future needs of the Polish job market.

Nevertheless, differences between the current status and the "target" status of hardware and teacher training can be estimated by referring to data from other European countries. In 1998, for example, there were 26 primary school pupils per computer in France, 16 in Great Britain, and 13 in Finland and Sweden. In middle schools, the averages were 12 pupils per computer in France, 11 in Finland, 9 in Great Britain, and 4 in Sweden. It is easy to note that the indicators in these countries for 1998 were significantly better than Poland's figures for the year 2002.
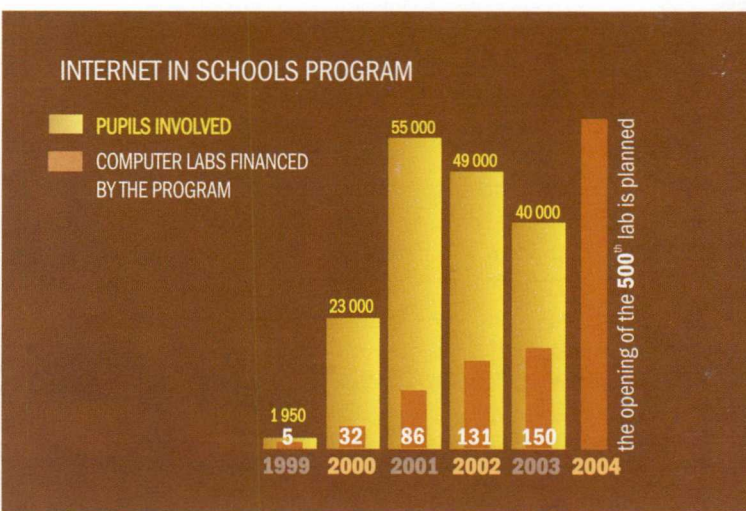
As concerns teachers' computer training, the accepted target figure is 80%. This means, however, that 80% of all teachers should be trained in computer technologies and be able to actually use them in the teaching process (as mentioned above, only 11.6% of all teachers in Poland now report that they are able do so).

Research of these two types, which identify the current state of computer education in Polish schools and set forth the desirable direction of change and the standards for such education, lays the foundation for programs aimed at changing the existing state of affairs. These programs involve hardware, software, teacher training, and teaching materials. An example of a concrete project in the field of computer education can be found in the "Internet in Schools" program, the objective of which is for pupils to gain all types of skills in using computer methods and techniques, thereby obtaining universal, supra-professional qualifications.

Studies show that computer education requires constant learning. Such learning requires that educational opportunities be generated not just within the school system but also outside it, in the form of courses and training sessions that apply varying teaching methods depending on the age of the learners. ■

Further reading:

Kwiatkowski S. M. (red., 2004): *Kwalifikacje zawodowe na współczesnym rynku pracy.* Warszawa: Instytut Badań Edukacyjnych.

Migdałek J., Kędzierska B. (2002): *Informatyczne przygotowanie nauczycieli.* Kraków: Wydawnictwo Rabid.

INTERNET IN SCHOOLS PROGRAM

PUPILS INVOLVED
COMPUTER LABS FINANCED BY THE PROGRAM

Chancellery of the President of the Republic of Poland

the opening of the 500th lab is planned

	1999	2000	2001	2002	2003	2004
Pupils involved	1 950	23 000	55 000	49 000	40 000	
Computer labs financed	5	32	86	131	150	

By putting computer labs in schools, the "Internet in Schools" program, developed under the auspices of Polish President Aleksander Kwasniewski, is one of the measures being implemented to improve computer education in Poland. The program is addressed to schools in the most underdeveloped regions of the country