Editorial

Quality of science education (VII)

There is a topic in science education that needs the special attention of teachers and researchers: the role and quality of textbooks for the secondary schools and the university. Traditionally the textbook was the main mean for studying in all past time. This century obliges us to rethink the role of it in science education together with the theme linked with computers and the Web.

The textbook still is the important education mean, including in countries with the good developed system of educational Web and computers in education, because it contains specially selected information about theoretical themes of the curriculum, special visual means to increase the understanding of theoretical concepts and laws, contains many exercises and problems for solving. A lot of good science textbooks have too the important part with detailed explanation how more important problems and exercises can be solved. The important subsystem of the modern textbook is the questions and exercises for control and self-control of knowledge and skills. The actual popularities and educational effectiveness of good textbooks shows us that this mean will be necessary for a long time. For this reason there is the important question of the quality of the design and preparation of textbooks in science, because a lot of examples (especially in some L. American countries) exist, when authors do not have the necessary experience and knowledge and these printed textbook sometimes can produce damage in student's knowledge and skills, but no increase them. Another important point for increasing of quality of textbooks in science is the need for the special system of textbook evaluation and assessment (usually organized by the Ministry of Education) with the objective to avoid the circulation and using textbooks with the law scientific and methodological quality. Unfortunately many countries do not have that essential system and that decreases the quality of science education at all.

In this sense we would like to attract readers´ attention to some important materials published in this journal about modern methodology of good textbooks design, for example, about more than 40 year experience of GUNTIS RUDZITIS (RUDZITIS 2000; GORSKIS 2002; RUDZITIS 2003; ORLIK 2005), the former Soviet and Latvian researcher and teacher who had more than 100 million copies of printed Chemistry textbooks in several languages and this reach experience can be a good reference for different textbook's authors.

Of course the computers and Web science education have become stronger each year. The wide opportunities of educational Web materials allow teachers and students to get a lot of teaching and learning information by a short time. The strength of this methodology as compared to our traditional methods of science instruction is in integrating many modern educational technology resources in the same place We can observe some positive examples, when the big attention of university, secondary school and other educational authorities in some countries and corresponding funding of projects for development Web based science instruction and modern computer means of education bring positive results in the level of science education. It is important that increasing of quality of science education with computer means requires a big attention and corresponding funding, for example, to one on interesting aspects in this direction: the design of computer textbook that is the topic of theoretical and practical research (ORLIK 1993).

The special question in this point should be stressed about the quality of computer education software in science. The situation in various countries shows us that this software of rather good quality and for different science subjects and principal themes and topic of science subjects exist only in English, the corresponding examples of software in other languages are not so plentiful. This journal pays a big attention to the theme of Web and computer science instruction. But we publish not only articles about computer and Web science education, we distribute the evaluated software of good quality (in biology N 1 vol. 3, in statistics for science N 1, vol. 4, in chemistry N 2. vol. 4) and look for another good examples of this software to continue that publishing and distributing.

So we can see that using modern textbook and computer educational technology in science are two parallel actual ways for university and secondary school education. This raises the significant question about the proper methodological correlation between computer and non-computer science educational means and methods (ORLIK 1998), for example, how to find the correct ratio of traditional and computer methods during the science laboratories in physics, chemistry and biology, in the evaluation and assessment of students in science subjects and so on. These interesting topics need further research and which results can be welcomed to the pages of this journal.

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