Editorial

Preparation of science teachers

All major problems related to the quality in science education are linked with the features of teacher's preparation, so the necessity to improve this training is a high priority for all countries. The modern science teacher in the secondary school and university has to know a lot of things and there are different kinds of important knowledge that the science teacher should gain:

1. First of all, he/she must know his/her own subject: mathematics, physics, chemistry or biology well.

Besides, there are a lot of issues on important pedagogical knowledge that he/she requires too:

2. How to design the modern curriculum
3. How to use modern active methods of teaching
4. How to use computers and Internet in his/her classes effectively
5. How to organize the science laboratory in an effective manner
6. How to assess students knowledge and abilities in the best way
7. How to motivate students so that they gain the best learning in science

But he/she must know too other many things to be a good teacher (ORLIK, 2002).

In many countries, we can find situations in which some teachers cannot answer positively to modern educational requirements. Generally, a good level of secondary school and university teacher's skills depends on two points: the quality of preparation of pre-service and the existence (or not) of an effective system for achieving a higher qualification level of in-service teachers. The high level of educational standards in the training of science education majors is very important here. This preparation consists of two important parts: the good quality of mathematics, physics, chemistry and biology courses for future teachers and the same good level in courses about methodology and didactic of science subjects. Unfortunately in many countries the programs for preparing future teachers of science (licenciaturas) are far from the necessary standards of quality (ORLIK, 2003). The existence and organization of effective system for improving in-service teacher preparation in modern methodologies is another central point in this analysis. In many national educational systems such organization doesn't exist at all and it's the main cause of low level of students achievements.

The social status of secondary school teacher is a very important point in this sense. Unfortunately, this status does not correspond to the necessities of improving the results in educational systems and the level of life. It's necessary to make government authorities, officials of education and in society, in general, the fact that the secondary school teacher must be taken as a CENTRAL PERSON for the development of each country and society.

Another important requirement for training science teachers is the need for designing the system of National Science Educational Standards (MOORE, 2003). A good example of a modern approach in this direction is the development of not only a national but an international standards of science and chemical education in Europe. But in some countries we don't have these standards at all or this process is only in its initial stage for establishing this significant part of teacher preparation. And it should be taken into account that designing a good system of standards is only the first step of the solution of this problem. Another part is to teach teachers how to use these standards in their daily class work, what could only be done if a good system of preparation and perfection of pre- and in-service teacher exists, as stated above.

The modern science teacher should do this difficult work on the base of integral methodology of teaching and learning (ORLIK, 2002). It's mean that the educational activities should be carried out with variety of instructional methods and means that allows students to gain good knowledge and develop high level skills.

This Journal is especially interested in promoting the best results and findings in science teaching methodology to help teachers in their very difficult activities to get progress in student's knowledge and skills in science.

Bibliography

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