

## A.I.F. Associazione per l'Insegnamento della Fisica, Italy

### Round Table 1 - *The improvement of science teaching and the role of the Institutions to improve quality pre service and in service teacher education*

One of the main outputs of the activities of any disciplinary Association of Teachers is, of course, to promote the professional growth of its members through the circulation and dissemination of relevant information (e.g. on new scientific trends and results), of practical ideas on educational methods and innovative ways of teaching, of significant teaching experiences and class activities. This they usually do through their journals, meetings and other activities.

Thus the teachers' associations can be regarded as organisms that, possibly without indulging in occasional fads, collect year after year the good teaching practices, put them into context according to the typical situations that characterise the different kinds of schools, disseminate them to their membership and hopefully, through their members, promote their diffusion towards the educational system at large.

Thanks to the strength and the know-how that derives from the real-life classroom experience of their members, the teachers' associations can offer their advice and counselling to the school authorities at all levels, on issues concerning the quality of teaching and learning in relation to the burdens and constraints that characterise the context in which the teaching takes place.

It is in the interest of any such association that the typical member be a good professional in the field: in our case, a successful, interested, dedicated and active teacher of physics. So it is natural that the initial education of new teachers, as well as the updating of teachers who are already working in the school, are topics to which the associations are sensitive and on which they have something to say.

In the field of the initial education of teachers AIF insists on the fundamental role of partnerships between Universities and schools, each ones acting according to their particular competencies. *Such collaboration is important for the University Departments involved because it allows them to approach a range of different school environments in which their students might eventually be engaged in their working life and to understand the underlying needs and peculiarities. Such collaboration is important for the schools because the teachers who act as tutors and/or receive the student teachers in their classes are stimulated by these interactions to rethink and consolidate their own professional strengths.*

In-service formation, too, should be open to different actors with different and complementary competencies. For example university professors and expert schoolteachers have different contributions to bring: on one side, knowledge acquired through basic research in diverse areas including, foremost in usefulness for the teachers, research on learning physics; on the other side the know-how that comes from the everyday teaching experience in the school environment.

Both aspects are essential for a balanced in-service formation. In this respect the teachers' associations, thanks to the presence of the membership across the country, represent a recognised pool of expert teachers to which other institutions and subjects can resort for advice and collaboration when it is necessary to fulfill local needs. We can recognise three levels of action:

1. a single school level on a day after day basis, by encouraging their membership to be open to discussion, confrontation and sharing of experiences with their colleagues in their own schools. In countries like Italy, where the teaching tradition is very individualistic and most teachers are not used to seeking more than cursory and occasional advice from their colleagues, systematic working in a collaborative mode usually requires an appreciable effort by the persons directly involved and concrete actions by the school authorities. *No effective collaboration and collective growth of the teaching staff would be possible without providing the necessary logistic facilities and without considering the time spent as working time.*

2. a more general level, occasionally

- organising qualified in-service courses on different disciplinary and/or methodological issues
- advising schools on expenditures for the physics lab and helping the teachers in the schools to make the best use of the available apparatus.

3. a promotional level: collecting and disseminating the most interesting experiences and the best materials and resources issuing from the most successful local courses is another duty of the associations, in the perspective of facilitating their repetition elsewhere.

It must be stressed that in-service updating has sense only if the average teacher

- perceives a personal need to grow professionally
- is willing to do so
- can dedicate time to attend, to reflect on the consequences, to include the innovations in his/her planning and to try them out in the classroom.

*This requires an awareness by the school authorities that*

- *in principle, time spent on up-dating in the teachers' disciplinary field is important for the quality of the services offered to the pupils of the school*
- *up-dating should be officially considered an institutional right of the teachers*
- *a reasonable allowance of time for updating must be granted to the teachers alongside with their other institutional duties.*