

The Global Perspective of Information Technology

For this strand I had prepared the following programme:

"In this strand we want to look beyond mathematics education. Without paying too much attention to the educational system, information technology has and will have far reaching effects on society, i.e. economics, science (and technology), administration, politics, military on a large scale as well as on the vocational, private, and social life of the individuals and smaller groups, possibly in the countries of the first, the second and the third world in rather different ways, and, of course, influencing the educational system and, in particular, mathematics teaching.

The global perspective of information technology does not only consist in these social matters (in a wide sense), but also includes epistemological, ethical, psychological and pedagogical etc. aspects.

The lectures and discussions could be concerned with

- the future nature of learning and teaching;
- the future contents of school and university education;
- the future organization of the educational system;
- the influence of information technology on everyday life (with regard to education in school, in particular to mathematics teaching);
- information technology as a subject matter (in mathematics, technology, philosophy, social sciences instruction?);
- the potential as well as the limits and dangers of information technology with respect to epistemological, ethical, psychological and pedagogical aspects;
- the state of the art of information technology (e.g. in the fields of Artificial Intelligence, life sciences, networks etc.) with respect to practical, philosophical, ethical, cognitive points of view;
- the overall effects of information technology on societies, and how governmental and non-governmental organization can exert influence.

Contributions to strand 7 can be utopian (with a minimum of realistic background) as well as sceptical. They need not relate explicitly to the field of education, but if they have some relevance to mathematics teaching, it is all the better."

Mainly the plenary lecture given by Walter Oberschelp and John Searl's talk fit the global, more theoretical character of this programme, whereas most of the other talks, originating in the contributors' middle and long term work, could be subsumed under the topic 'the future contents', and they reported more or less intensively about concrete examples of mathematics teaching (which is no disadvantage at all) on high school or university level. After all, they

often laid emphasis on educational ideas with their own importance independent from the use of technology in the first place, thus being more affine to strand 7 than to other strands, namely: student attitudes to using calculators (John Berry & Roger Fentem), modules with mathematical contents (Stefanie Krivsky), epistemology (Ewa Lakoma), critical thinking (Tatyana Olejnik), discovery learning (Tadeusz Ratusinski), self directed learning (Monika Schwarze), mathematical abilities (Angela Schwenk & Manfred Berger). In view of this diversity of topics, it goes without saying that the discussions concentrated on the single talks, and nearly no cross connections were drawn.