

Resolution 1528 (2006)¹

The declining interest of students for scientific studies

Parliamentary Assembly

1. The defence of human rights, the Council of Europe's main task, cannot be restricted to protests or actions to ensure respect for the law and democracy. What does the term "human rights" mean to someone dying of hunger or to one of the 100 million children who are "Aids orphans"? Is it necessary to recall that one human being dies from Aids every fifteen seconds? What is the meaning of "freedom" today for a nation which scientifically and technologically – and therefore as far as its development is concerned – is totally dependent on other countries?
2. The development of science and technology does not automatically guarantee respect for human rights but it is an essential precondition. It is crucial in order to fight against injustice, and mastery of science is indispensable for a country if democracy is to last. A country which is not at the cutting edge of nanosciences or nanotechnologies or which lags behind in the field of cell biology, to take just two examples, runs the risk of falling under the domination of another country.
3. The Parliamentary Assembly is concerned about the significant decline in the number of students in the science disciplines and believes that this ultimately poses a serious threat for freedom and the protection of human rights in European countries. Each year, China trains some 300 000 engineers and by 2009, in terms of research and development, it will be ahead of both the United States of America and all European countries.
4. More than half of the big multinational companies have relocated a significant part of their research and development to "emerging" countries (China, India, Singapore) and this proportion is set to rise in coming years.
5. There are many reasons for this declining interest but they all tie in with a number of key considerations:
 - 5.1. the education pupils receive is too abstract, too far removed from their day-to-day experience and their own interests. It bores them instead of taking advantage of their inquisitiveness and building on the very positive image of science and scientists they have developed at primary school level.
 - 5.2. the image of scientists and technicians conveyed in the media is not very appealing to young people from around the age of 15 upwards and does not encourage them to consider scientific professions as a career option;
 - 5.3. scientific studies are, not without reason, perceived as being difficult and longer than those for other disciplines;
 - 5.4. the social status of researchers, engineers and even doctors has declined considerably in many European countries;
 - 5.5. salaries in scientific professions too have fallen in comparison with other sectors. After often longer and more difficult studies, salary increases are much slower.

1. *Text adopted by the Standing Committee, acting on behalf of the Assembly on 17 November 2006 (see [Doc. 10949](#), report of the Committee on Culture, Science and Education, rapporteur: Mr Lengagne).*



6. If a substantial effort is not made in the coming years to counter this situation in which students are opting for other disciplines, there will be legitimate cause for concern about the future of European nations. Not all the countries of Europe are affected by this crisis to the same extent but, overall, the decline in interest in the sciences is very worrying.

7. While the shortage of science students is worrying, the inadequate scientific training of economists and politicians can have serious consequences which are rarely mentioned. An American university professor recently said, "Politicians do not understand science, and rarely seek the advice of scientists and engineers in addressing major issues. It is time to recognise that governments are ill-equipped to understand the sophisticated technological challenges and opportunities facing the world."

8. Such views should encourage the governments of Council of Europe member states to adopt practical measures, as a matter of urgency, to attract more students, both male and female, towards scientific and technical careers, and strengthen the science element in the training given to those who are to take economic and political decisions in the future.

9. With this aim in mind, the Assembly invites the governments and other competent authorities of member states to consider the following principles:

9.1. science teaching, from primary school on, should draw on children's natural inquisitiveness in order to help them discover, as far as possible by themselves, the laws of nature. Accordingly, such teaching should not be excessively theoretical. It should be based on the child's day-to-day experience and should not, as is often the case today, be in the form of knowledge with little genuine relevance imposed from above. This presupposes sound theoretical training for the teacher and a new approach to teaching;

9.2. pupils must be informed as fully as possible on career prospects in science and technology as soon as they start secondary school. No attempt should be made to hide the fact that studies in these fields will be generally longer and more difficult than in other areas, but they should be made aware that the value of their future profession would be a just reward for the additional effort required;

9.3. steps should be taken to upgrade the image of researchers, engineers and scientists. It should be shown that a scientific career can be a very rewarding one, since a recent survey showed that when considering their future career 90% of young people are keen to opt for one that seems exciting. This will require a review of the often distorted way scientific progress, based on a purely factual event, is portrayed in the media. Science and technology evolve at a tremendous pace. It is therefore essential to place an emphasis on retraining and on exchanges between scientists in different countries;

9.4. it is not enough simply to improve the scientist's image. Scientific careers also need to be enhanced from the point of view of salaries and bonuses;

9.5. many companies attach greater weight to commercial aspects rather than creativity. While this might be profitable in the short term, it can prove counterproductive in the medium and long term. Several countries, such as the United States, have now taken this on board;

9.6. particular effort must be made to encourage girls to take up scientific careers since in many countries those opting for a career in this field are still fewer in number than boys. Surveys also show that in many countries "minorities" are seldom attracted by the scientific professions. They too must be the focus of a special effort;

9.7. television games are increasingly popular. They do not always require a particularly high intellectual level, indeed far from it, and are more a test of memory than intelligence, but their popularity with the viewers is undisputed. It is therefore suggested that competitions be run in all the scientific disciplines, along the lines of the inter-school challenges held in certain countries, in maths or physics, but in a way that is more popular and more attractive and does not restrict participation exclusively to pupils or students.

10. Quite apart from the need for the countries of Europe not to allow themselves to be overtaken (if this has not already happened) by the emerging countries, it is also important for our citizens to maintain a sufficiently critical mind so as not to founder in excessive dogmatism or fall under the influence of "gurus" and sects. A scientist recently wrote: "the people of the 21st century who have lost their curiosity, competence and critical approach, who simply press buttons without thinking about everything that surrounds them, can be particularly susceptible to all sorts of beliefs peddled by 'gurus'".

11. Science, today more than ever before, should be part and parcel of one's general culture as it enables one to maintain a sufficiently critical mind to remain impervious to the words of false prophets. Efforts to rekindle the French 18th century idea of the honnête homme are also a means of contributing to the defence of human rights which is the very role of the Council of Europe.