GIREP newsletter

Groupe international de recherche sur l'enseignement de la physique
International Research Group on Physics Teaching
Internationaler Arbeitskreis zur Förderung des Physikunterrichtes

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PHYSICS EDUCATION IN CHINA

1. General information

1.1 The present school system and the general situation of curriculum

In China, children start at the age of 7, after 3 or 4 years in kindergarten, a 5 years long (for 35% of the total) or 6 years long (for 65% of the total) elementary school, followed by 3 years of junior high school; thus they finish the compulsory education stage. According to the statistics in 1997, 93.7% of the graduates of elementary school continue schooling at junior high school level. Then they have to take a locally unified examination in order to enter a senior high school. In the city area, most graduates of junior high school, though only 44.3% for the average, continue their studies in senior high schools classified in three different types: the so-called key school, ordinary school and vocational/technical school. If comparing only what is taught in the first two kind schools, one will find no significant difference between them. Yet the number of key schools is much lower than either of the other two, and a key school which ranks at a certain level from a local district of a city to a national one, enjoys great privilege in selecting students and getting better resources. Therefore, much fewer graduates from an ordinary senior high school than from a key school can pass the examination for entering a university, although most students from such a school are also supposed to take it as their common goal. So, higher education remains a dream for the majority of young people. In 1999 academic year, colleges and universities will enroll 1.3 million graduates of senior high school. But, although being the highest record since 1978, it will only satisfy the need of about one-third of the total graduates,

The disciplines and their content taught in schools are prescribed by the national curriculum syllabi issued by the Ministry of Education. The syllabi have been kept changing and adjusting since 1980 toward, more or less, the direction with more flexibility and diversity. For example, in 1993 a policy that made locally regulated disciplines along with the nationally unified ones possible was put into practice in pre-junior high school levels. For senior high school students, more optional courses are offered.

1.2 Science education at school levels

At both junior and senior high school level, science is taught separately as Physics, Chemistry and Biology. At elementary level, there is a course named "Nature" which can be regarded as the only integrated science course in school. But unfortunately, it is perhaps the worst course on elementary level in terms of both its role played in the school curriculum and the way of being taught in the classroom. The course is usually assigned to teach by a teacher who has another subject as his/her main task, Chinese Language or Mathematics for instance, and both teachers and parents pay little attention to the result of science course. At junior high school level, courses of integrated science have now been tentatively implemented in some schools in Zhejiang and Shanghai. Feedback from the experiments has indicated that no real progress can be reached without successful teacher training. Unfortunately, until now only efforts in providing double-majored education have been undertaken in some teacher colleges and universities in order to prepare future teachers competent in teaching two or more subjects in high school.

2. Social, systematical and cultural context for physics education

2.1 The national examination system

Even now China still has a highly unified examination system ranging from a school to national scale. This reminds one of the Chinese imperial examination system started over 1,400 years ago for selecting certain royal officials. However, that should not be simply and directly regarded as the origin of today's system because everyone knows that the imperial examination system has being officially criticized in China since the founding of the People's Republic of China in 1949 for its narrow and useless content and extremely utilitarian orientation. In Chinese ancient as well as modern literature a student learning for examination was very often described as a brainless bookworm lacking genuine ability. But the current examination system led by the nationwide unified university entrance examination indeed significantly impacts on the teaching and learning in schools at all levels. The school education in most cases is examination-centered. In establishing this situation, examination undoubtedly plays a vital role because it determines a student's subsequent education and future opportunities. However, there is a much more complicated background. The traditional conception of and attitude to the education of next generation, the still-existing differences between life in a city and in rural area and feedback from employment market which has gradually become a free one all contribute more or less to the school instruction.

2.2 The traditional attitude to the children's education in a Chinese family

Although in Chinese traditional family ethic, children should respect their parents and other elders, there was also a tradition that parents, especially mothers, made sacrifice to the education of their children. There were many touching stories in every era describing how the parents overcame huge difficulties to get their children educated. There was also a lot of attractive stories, being performed in different ways of art, picturing the process of getting success in education through hard work. This undoubtedly contributed to the formation of a situation described by some educators as "binding the schools, the students and their parents in the same tank toward the same destination". According to my observation, this situation has entered into the wave crest period in our society and will be kept high for years to come due to two important reasons. First, parents of today's children belong to a special generation that in majority lost opportunities for a higher education for themselves or even for regular schooling. They would like their children to finish their dream. Therefore, heavy pressure is exerted on their children as well as on themselves. Second, most children now come from the family with only one child and become the center in many families. Parents as well as grandparents in many cases constitute a very strong force influencing the education. Moreover, message from recent employment market strongly advised the public that without a diploma of higher education, it is difficult to find a good job. In this way, the society has become, more or less, diploma-oriented and the education examination-oriented.

2.3 Education of physics teachers

How the physics teachers are trained also has great impact on general physics education in China. Since early 1950's, our teacher education has been performed in the system adopted from the former Soviet Union. Normal colleges and universities were founded specially for pre-service education of high school teachers. Different departments were established corresponding to the school disciplines. Future physics teachers are trained at the physics department where most professors recognize themselves as physicists or physics teachers. They think, consciously or unconsciously, that they are teaching physics and therefore physics is the most important and should be their main concern. In most normal universities the curricula for prospective physics teachers are almost a copy of those for future physicists except for offering several pedagogical courses which, however, take only about 5% of the total program for teacher education. As to the result of this measure, perhaps the following comment given by an American visiting professor who had one year physics teaching experience in one of the leading Chinese normal university is more objective and instructive: "My students were generally well-prepared and well motivated. They were both interested in and good at the abstract aspects of physics, having less interest in or experience with its applications. They were narrowly focused on physics, and had few outside interests. They were excellent test takers and my attempts to determine relative strengths and weaknesses were thwarted by their uniformly high test scores. Students were usually reluctant to volunteer answers in class for fear they would appear to be showing off, but answered questions thoroughly when asked. (see Proceedings of ICUPE, AIP1997 pp.867-868) " It does not sound very bad, but considering the changed and changing environment for physics education we have no reason for being optimistic.

2.4 Position of physics in school curriculum

Modern physics education in China has less than 100 years history but, more often than not, took a better position than other science disciplines. According to the current national curriculum, physics is a required course and covers the period from the second year of junior high school until finishing for all high school students. The only exception is that in the last year of senior high school those aiming at studying humanity and society science in future higher education will leave physics and thus the mainstream of other students. The statistics in 1997 showed that there were above 40 million high school students taking physics in China. Undoubtedly no other individual country in the world has so large a physics learning population. However, due to its highly planned and independent teacher education system described above, physics is usually taught by those who have a least 8 years experience of formal physics learning: 5 years in high school and 3 years in teacher college's physics major. Although in some rural areas one teacher has to teach two and even more subjects, to teach such a subject as physics by a non-specialist is not common. Moreover, physics is enjoying the greatest number of hours of any science in the national curriculum even though it has experienced a continued cut in the last 15 years. The most important impetus for this special treatment was the government and population's common understanding of the unique importance of physics in helping the country's industrialization. Will this favorable environment last without any problem?

3. Present challenge to physics education

From the information above, one might conclude that the environment for physics education in China is much better than in most western countries. As a matter of fact, we are not so lucky. While facing a rather simple world we were embarrassingly lacking resources. Now, although being still far from a developed condition, we have already faced almost all the challenges that the physics teachers in the industrialized countries ever met.

First, the gradually released ideological atmosphere during the last 20 years finally brought about the critical thinking about the education goals and objectives as well as about the way to evaluate student's achievement. Generally speaking, this idea transit is advancing toward a more open, personalized and democratic education system. This orientation has been embodied into the government policy of education reform. For example, in 1986, the Ministry of Education issued a policy to promote diversity of school textbooks by establishing a school textbook evaluation system that, in principle, gives any individual and unit the right to write a textbook. In recent years, the idea of replacing the prevalent "Education for Examination" with the so-called "Education for Suzhi" has taken the status of being a supporting philosophy of school education as a result of the promotion of both government, society and economical development. "Suzhi" in Chinese means the individual's general competence integrated by one's knowledge, intellectual and practical skills and affective characters. So, "Education for Suzhi" advocates the education emphasizing full and harmonious development for all students, not only for the future experts and leaders, to prepare qualified future citizens in an increasingly knowledge-and-intelligence-oriented society. In terms of science education, it corresponds the idea of "Science literacy for all". All these changes have become a real challenge for science teachers as they put them in a situation for which most of them have not been well prepared.

Besides, with the "opening" of China and its social and economic development, a teacher, especially physics teacher, has felt increasingly the difficulty to motivate and satisfy his or her students. Competing with television, computer and the related games and other distractions, the chalk-and-talk instruction dominating most present physics classrooms is obviously in a very weak position. The trump-card-effect of using examination is losing its force especially for students with little possibility of success. For physics teachers, how to enhance their students' interest in learning physics is another reality and an unavoidable challenge, unprecedented for many of them.

Moreover, for physics teachers, their relatively strong academic background in science is a passport toward technology-oriented and better-paid jobs created by the economical reform since 1979 in China. Therefore, keeping motivation for physics education is also a big challenge for many physics teachers themselves. Although the current situation seems not worrying because economical growth has been drawn a bit, one can not forget the most difficult period not long ago when too many people seemed only to pay attention to the newly-established stock market in China.

4. Prospect of the future: enhancing teachers' role in turning the challenge into opportunities

The challenges described above do mean more difficulties and problems facing the present physics education in China. However, in long-term concern it may be an opportunity for healthy development of future physics education. Because by shaking the traditional education philosophy and practice it may make one walk out from the illusionary ideas about physics and physics teaching/learning which have without trouble accompanied many physics teachers for years but actually are unscientific and unreasonable according to the modern view of education. Nevertheless, it is impossible to turn the challenge into opportunities without conscious and persistent effort of enough innovative and enthusiastic physics teachers. Fortunately, in China we do have such kind of teachers. Considering their model roles for other teachers, they were, are and will be the most effective impetus and working force of physics education innovation in China. Since 1980's China began to establish connection with the international physics education community and thus gave those teachers with enthusiasm and competence for physics education innovation more opportunities for both professional and self-confidence enhancement. In recent years, some of them had the chance to go abroad meeting and exchanging opinions with their counterparts in other countries. In 1997 at the "Creativity in Physics Education" conference in Sopron, Hungary and in 1998 at the "Hands-on Experiments in Physics Education" conference in Duisburg, Germany they learned a lot from other participants and also got themselves being recognized. In August 1999, more of them will meet at the "'99 International Conference of Physics Teachers and Educators" in Guilin, China with colleagues and distinguished experts from many parts of the world and will certainly make good use of the opportunity to promote progress of physics education in China.

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A European Project : "Labwork in Science Education"
France, Denmark, Germany, Great Britain, Greece, Italy
1996-98

In June 1995, the research proposal 'Labwork in Science Education' was written to address the work content of the Fourth call of Targeted Socio-economic Research from the European Commission, and specifically science education. It was decided to provide :

- a new formulation of objectives to meet new needs in science education
- study and elicitation of the general advantages of specific aspects of national systems of education, as well as awareness of the evolution of the educational systems
- an overview of the key competencies promoted through labwork with respect to the labour market

A general aim was also to constitute a community of researchers able to take forward collaboration at European level.

Though experimental teaching has been often studied in the community of international researchers, a strong basis of mutual knowledge in the European context was missing on this subject. Financially speaking, this form of teaching is rather expensive, suggesting the relevance of addressing the effectiveness of labwork. Socially speaking, laboratory teaching has a high potential. In addition, the variety of knowledge that it makes possible to be acquired is wide open, as it was intended to demonstrate in the project. The most adapted academic levels for such a theme of research was judged to be upper secondary school and undergraduate level at university. Though concerning a rather limited and variable part of the population of young people according to the country, these levels of study are critical for scientifically educated people, be they destined to work as professional scientists in the future, or otherwise.

Given the expertise of the different participants, it was possible to use several methods to address research questions:

- A grid of analysis of labwork sheets, called 'The map of variety of labwork' was developed and allowed to analyse labwork sheets from across Europe, showing similarities and differences. In particular a common standard appeared as existing in any country, namely guided labwork in small groups achieving hands-on experiments by themselves. A survey at European level confirmed these results and enlarged them to the comparison of different educational systems.
- A second survey was carried out to elicit students’ and teachers’ images of science as related to labwork. It pointed that, at the level studied, students commonly draw upon three broad representations of empirical work in various contexts relevant to labwork learning. These are a *data-focused view* in which scientific knowledge claims are viewed as descriptions of actual events in the material world, a *radical relativist view* in which it is not thought possible to evaluate scientific knowledge claims in terms of data, and a *theory and data related view* in which knowledge claims, data and experimental methods are thought to be inter-related and interdependent. Many students drew upon data focused views and radical relativist views inappropriately. Concerning teachers' views of science, a survey could characterise which can be the share of teachers in forming students’ images of science. It suggests that for teachers’ training, the didactical activity should be framed in an epistemological context strongly related with the disciplinary and historical aspects. Furthermore the connection with the contemporary research world should be encouraged in secondary school teachers’ training.
- A third survey studied teachers’ objectives for labwork in Europe. It showed that teachers expect mainly from experimental teaching to give signification to theoretical claims. This is common in all countries. Teaching a scientific approach is not ranked in the same way in the different countries. The results of this survey helped to word recommendations.
- 23 case-studies in five countries were carried out on specific issues, to generate illustrative material and to draw upon when developing recommendations for effectiveness.

They illustrate the diverse organisational structures for labwork and the possible objectives in the following contexts :

- typical labwork, which could be studied in depth. Suggestions were made to improve their effectiveness. For instance, predictions could be asked to students, a better balance between qualitative and quantitative data is proposed, and a number of objectives have been revealed. It is proposed to define them for each session.
- the potential objectives of sessions including new technologies. The effectiveness has been proved to interpret data and graphs, to produce and compare models. The necessary computer skills have been characterised.
- the conditions of successful open-ended labwork. It has been shown that effectiveness of open-ended labwork is enhanced if students get a previous knowledge of measurement devices, sophisticated data processing, etc. The studies show that open-ended sessions and typical labwork are complementary.
- the fruitfulness of organising sessions to focus on selected phases of an experimental approach. For example, data processing can be taught discretely as a laboratory procedure, or alternatively the underlying epistemological assumptions inherent in data processing can be addressed.

These results allowed to define the effectiveness of different organisational strategies for labwork at two levels :
‘Effectiveness 1’ : in terms of the activities actually performed by students during labwork. ‘Effectiveness 2’ : in terms of students’ learning as a result of labwork.

The project produced recommendations to insure a better effectiveness for labwork, given the existing constraints in each country. It happens that, presently, some objectives are not achieved because not addressed specifically. So a number of potential objectives are very rarely addressed currently. If these issues were addressed, students could learn more from labwork. Each labwork session should be reasonably ambitious and targeted, the strategy being a clear orientation towards certain objectives. A long term coherent structure of labwork is necessary. Given the definition of two types of effectiveness, specific evaluation has to be implemented.

A condition for improved effectiveness is a different focus for teachers' education and a deep transformation of resources, labwork sheets and the types of guidance available to students during labwork.

The outcomes of the project are a final report which is published by the European Commission under the title of the project. They also comprise 10 Working papers, expanding data and results. The list can be found on the EC website : http://www.cordis.lu/
The Working papers themselves are available on diverse partners' websites. Information can be obtained from the Email address of the co-ordinator:
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Inquiry on experiments and the use of computers at schools in Slovenia

Introduction

Presently in Slovenia, physics is taught as separate subject in the last two years of lower secondary school (age 14, 15) and in the most of the upper secondary schools (age 15 to 19). It is optional subject for final examination (called "matura"), needed for university studies. Pre-university levels of education have gone through several changes in the last two decades and some changes are still in preparation. These reforms have significantly affected organisation of the education system as well as curricula of all the subjects. Among evaluations following the changes in education, it is difficult to find relevant research of the influence of these changes on the teaching methods. On the other hand, teaching was strongly influenced by information technology. Slovenian government has been sponsoring a very big project to promote the use of computers at all school levels.

It is needless to say that there is less time available for teaching physics in most of the secondary schools. Hence, what is the influence of reforms and of growing role of information technology on teaching methods (at reduced time)? Do computer simulations, animations, Internet etc. compete with so called true experiments? What about the position of computer based experiments (or on-line experiments) that can be understood as the use of computers in combination with true experiments?

To get some impression on these questions, we made in 1997 an inquiry among 98 first year students (generation 97/98) at the Faculty of Education in Ljubljana, where we are training future lower secondary school teachers. The results were interesting, and therefore, in 1998 we repeated the inquiry among our students (26 future physics teachers, 99 future teachers of primary school) and among students of the Faculty of Mathematics and Physics (73 students of physics). From 198 students, 84 have chosen physics for final examination in upper secondary school. The most of the students had at least 3 years of physics (210 hours) and those taking physics for final examination had 315 hours with about 15 obligatory laboratory experiments as a part of curriculum.

Questions

It is important to emphasise that the results of the inquiry must be understood as what the students remembered. In the first part of the questionnaire, students were asked about the approximate number of:

- demonstrational experiments
- laboratory (hands-on) experiments
- computer based (or on-line) experiments
- computer simulations and animations

Each of these terms was explained with a short definition (for example: *Experiment is computer based if the apparatus is directly logged to the computer through sensors. Computer usually plots the curves of measured physical variables, displays tables, sometimes makes analyses*). Numbers were quoted in intervals: 0, 1 to 5, 5 to 20, more than 20, I do not remember. There were separate questions for lower and upper secondary school physics. Students were also asked to define the importance of different types of activities with marks from not important (1) to very important (4).

In the second part of the questionnaire there were short descriptions of all kinds of experiments seen or done. Experiments were grouped according to some more general topics. It was found out that the most frequent are experiments with electric circuits (85%), followed by bodies at rest, kinematics and electrostatics. Not very popular are experiments on quantum mechanics, semiconductors, temperature expansion, heat and first law of thermodynamics, sound waves.

Results and comments

From lower secondary school, 61% of students remember more then 5 demonstrational experiments per year, and from upper secondary school, 72%. Therefore, the general impression is better than expected.

Computer is more frequently used as a tool at upper than at lower secondary school level (that is understandable and perhaps even good). Personally I was happy to find out that about 61% of students remembered computer based experiments and that they were applied in school even more often as simulations and animations (53%). I assume this will not be the case in future because of the progress of the Internet (java applets), multimedia etc. Performing computer based experiments takes more time and effort than simulations.

From two years of physics at lower secondary school, 19% of students do not remember any laboratory experiments and 48% remember 1 to 5 of them. Students that took physics for final examination in upper secondary school generally performed more than 20 experiments, while others mostly remembered 1 to 5 laboratory experiments and 8% of students had no laboratory experience at all. Even if taking into account that students remember upper secondary school better than the lower one, hands-on experimental work in the first two years of physics should have more substantial position.

It is interesting that all students appreciate laboratory work as the most important (average mark 3.6); next to it are demonstrational experiments (3.4). Difference between computer controlled experiments on one side and simulations and animations on the other is not significant (2.9 : 2.8). Still it is evident that physics students at both faculties value computer more (3.0) than future primary school teachers (2.6).

We intend to repeat the inquiry in the next years, hopping to find out what are the trends. It would be interesting to determine whether or not the present reforms will bring what they are promising - a more pleasant school with more motivated, successful and happy pupils. I believe that experimental work and the use of modern technology are important in school science teaching.

I would be pleased to get data from other countries or to learn if someone has performed a similar inquiry.

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Progress in the Post-16 Initiative of the Institute of Physics

Shaping the Future: The booklet series

One of the aims are of the post 16 initiative is to stimulate debate about the nature and purpose off physics teaching for the 16 to 19 year old age bracket. As part of this debate to a series of books to stimulate and inform are planned. The first of this series, Making Physics Connect, was published in January 1999. It was well received at the Association for Science Education (ASE) annual meeting in Reading. Copies are available from the project administrator, Ingrid Ebeyer, at the Institute of physics, price £5 plus postage. The second booklet of the series, Physics in a Mathematical Mood, is in progress and the initial debate to start this process was held at the ASE.

A new A –level

The writing for the new A-Level, Advancing Physics, is well under way. The A–level will be examined from September 2001, with the first piloting schools starting in September 1999. The exam is in two parts, AS is held at the end of the first year and A2 at the end of the second. This new pattern will apply to all A levels from September 2000. The course is structured in 20 chapters and looks like this:

Advancing Physics: Advanced Subsidiary (AS) course
Physics in action

- provides a graduated path from GCSE to AS level
- focus on physics in use in many different ways

Communication
1 ***Imaging***
including optics and ideas about information
2 ***Sensing***
including simple circuit theory up to the potential divider
3 ***Signaling***
including spectra and polarisation as well as digital signals
Designer Materials
4 ***Testing materials***
including mechanical, optical and electrical properties, and giving attention to a wide range of materials in use
5 ***Looking inside materials***
including explanation of properties of materials in terms of structure at various scales; designing new materials

Understanding processes
- progressing towards new ways of thinking
- focus on curiosity-driven physics

Waves and quantum behaviour
6 ***Wave behaviour***
including double slit and gratings; also colour and thin films
7 ***Quantum behaviour***
including photons and evidence of electron diffraction
Space and time
8 ***Mapping space and time***
including vectors, displacement and velocity
9 ***Computing the next move***
including uniform acceleration and uniform gravitational force
10 ***Our place in the Universe***
including evidence of a hot big bang origin of the Universe; brief introduction to relativity

Advancing Physics: Advanced level (A2) course
Rise and fall of the clockwork Universe
- gradual development of more mathematical thinking
- focus on how physics changes the way we think, and our lives

Change and motion
1 ***Models and rules***
including exponential decay and simple computer models
2 ***Travel and industry***
including energy and momentum conservation
3 ***Ideal clockwork***
including harmonic oscillator as a model
The very large and very small
4 ***Celestial clockwork***
including orbits, circular motion, gravitational field
5 ***Probing deep into matter***
including electric field, scattering, nuclear atom, elementary particles

The probabilistic Universe
- developing ideas of randomness
- blends physics and engineering perspectives

Matter in extremes
6 ***Matter: very simple***
including ideal gases, kinetic theory
7 ***Matter: very hot and cold***

including ionisation, thermal behaviour, Boltzmann factor

Shaping new worlds

8 ***Radiation and risk***

including radioactivity, nuclear stability

9 ***Power at every hand***

including motor, dynamo, transformer

10 ***Power production and risk***

including generation and distribution of power

The first drafts of publications for Advancing Physics were also shown at the ASE in January. These were well received by the teachers. There is a three pronged approach to publishing. The first two are a student book and CD-ROM. These are tightly integrated and complementary, each fulfilling a function suited to the appropriate medium. The CD-ROM allows the book to tell a convincing story whilst enabling the teacher and the student to have easy access to a significant number of resources, linked in ways which make the structure of the course and the physics within the course evident without being overbearing. There will be two versions of the CD, the student version will be a mirror of the teachers version with notes and sections directed at teachers removed. In both versions of the CD the emphasis is on the users being able to navigate and shape the information to make the whole an active learning tool.

Ian Lawrence, King's school, Worcester

99 International Conference of Physics Teachers & Educators

TURNING THE CHALLENGE INTO OPPORTUNITIES:

The Historic Mission of Physics Teacher for the Next Millenium

19-23 August 1999 in Guilin, P. R. China

Conference homepage: http://www.gxnu.edu.cn/ipe/99icpt.html

Contact: Prof. LUO Xingkai, Institute of Physics Education, Guangxi Normal Univ., Guilin 541004, P.R. China, Fax: 0086-773-5818071, E-mail: xkluo@mailbox.gxnu.edu.cn

Notes for GIREP members:

Proceedings from the conference in Duisburg will be published in a printed form and as a CD-ROM. All GIREP members who did not attend the conference should please write explicitly to the treasurer which version (printed or CD-ROM) they want to have. GIREP can afford only to send one version. If there is no reaction we will send the CD-ROM version!

Next GIREP conference will be in August 2000 in Barcelona.

Please look at our home page http://www.pef.uni-lj.si/girep ***and fill in the members' form!***

User name: girep, password: duis98

Please send contributions for the next GIREP Newsletter till 30 August 1999

Apology of the editor:

In No. 39, in the introduction to Prof. Nachtigall's contribution, there it stays that he has been named honorary professor at 40 universities in China. This is of course a lapsus: although several Chinese and other universities have named him a honorary professor, it would be impossible that 40 universities only in China would have done it!

GIREP COMMITTEE

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FEES

The accounting year runs from January 1 to January 1. Fees paid after September in any year will be credited on the following year, unless the applicant specifies otherwise.
The current fee (1999) is 12 GBP (GBP = British Pounds Sterling), EURO 17 or USD 18 preferably paid into the following account:
Christian Ucke, Postbank (GIRO) Muenchen, Account No. 355 28-808, BLZ 700 100 80.
BLZ (= BankLeitZahl) means a special sort of code for the Postbank in Germany.
Please do not pay into other accounts.
The members should pay their own bank charges and mailing costs. At the same time, please send a note (by letter, fax or e-mail) to the Treasurer, confirming how much money you sent and when and for what years.
In some countries, it is possible to transfer money from the national **Post**bank with EUROGIRO free of charge (Belgium, Germany, Japan, Luxembourg, Switzerland, Spain) or with a small charge (Denmark, Finland, France, Great Britain, Netherlands, Austria, Sweden).
If you send a EUROCHEQUE filled out in DEM, there are no expenses at all for the Treasurer. If you send a cheque filled in your local currency, there are DEM 3 (Euro 1.50) expenses for the Treasurer. Please do not send cheques drawn on a bank from your country (except UK) but filled out in GBP (horrible expenses then).
If you prefer to reduce bank expenses, you may pay several years fees in advance.
It is also possible to pay by credit card (EURO-/MASTERCARD or VISA; no others). Please write or fax to the Treasurer your full card number, expiration date and the amount. Add 5% expenses to the amount. The Treasurer will convert that amount into DEM and then charge your credit card account in DEM.
It is not recommended to use e-mail for sending credit card numbers.
In cases of real difficulty to arrange payment, please contact the Secretary or the Treasurer who are ready to advise whether special arrangements can be made.
The General Assembly of GIREP members in Udine (August 1995) accepted the following supplementary new article for the GIREP statutes:
Each year in October, those members who have not paid for the previous two years will be removed from the membership list.