

Engineering education world

Contributions are invited for this feature. News items on policies that concern the engineering education world, new courses and curricula either of a unique nature or of international interest, new innovative laboratories and concepts, funding news for engineering research projects involving international participation, special international continuing education courses and news, industry-university interaction, engineering faculty news, and developments in engineering education of international interest. Please send news items and conference information to the Editor-in-Chief. Public relations offices of universities and human resources divisions in industry are requested to contact the Editor with news items concerning engineering education and training.

Europe

Founding of a European Council for Student Affairs

The organisation of support for the economic and social needs of European students is to be undertaken by the newly created European Council for Student Affairs, which is responsible for activities in the European Union and EFTA countries. The first president of the council is Professor **Albert von Mutius** who heads the German Studentenwerk organisation. The council hopes to co-ordinate student support services in Europe. Conditions for support are divergent in European countries. Denmark and The Netherlands support foreign studies, while Italy, Spain and Greece have no foreign student aid. European programmes such as ERASMUS, LINGUA and COMETT provide insufficient support for the number of applicants from southern Europe. The Council's initial task is a study of the social situation of students, which is planned by Hochschul-Informationen-System of Hanover in Germany.

An Academic Co-operation Association linking Europe

Proliferation of international students and higher education programmes has prompted the establishment of the Academic Co-operation Association (ACA) headed by former ERASMUS programme chief **Alan Smith**, a pioneer in European programmes from the days of the Joint

Studies Projects in the 1970s. The association has members from 11 European countries including the three major agencies: the British Council, the German Academic Exchange Service (DAAD) and the equivalent French Aries. ACA has been set up to improve information dissemination, provide help in international academic exchange, and manage programs and projects for international partners, also outside Europe. It also evaluates types of co-operation and academic exchanges, and offers access to national agencies searching for ways to expand their international contacts and operations.

For information contact *The Academic Co-operation Association, rue d'Egmont 15, 1050 Brussels, Belgium. Tel. +3225132241*

United Kingdom

Assessments in mechanical engineering

The Higher Education Funding Council has published its assessments of mechanical engineering research and teaching in selected British institutions. Excellent teaching has been credited to the universities of Bath, Bristol, Coventry, Manchester Metropolitan and Nottingham. Satisfactory marks were given to Birmingham, Brighton, Coventry Technical College, Harper Adams Agricultural College, Hull, Lancaster, Luton, Newcastle, the Open University, Portsmouth, Surrey and Sussex. Research quality was best in Bath, Bristol, Hull,

Newcastle, Nottingham and Surrey, while it was judged as poor in Portsmouth. The assessments have been criticized as history and law departments have consistently better marks than mechanical engineering and chemistry. It seems that subjects which are more expensive to teach tend to receive poorer marks. The Council has refused to comment as the assessments are still preliminary.

Germany

Protracted study periods may not be so bad after all

In a conference on higher education and the engineering profession organized by the VDI (German Federation of Engineers), the ongoing discussion on the long study times and adaptation of higher education to market demands was taken up. Most delegates were concerned about the extended study periods of German engineering students. Not so Professor **Klaus Henning**, an education expert from the Technical University of Aachen. He claims that the 2000 students of mechanical engineering at his institution who are doing auxiliary jobs in research and development during their studies are contributing to increasing know-how of enterprises, and are cheaper than if they would be employed as young engineers by the same companies. It may be questioned whether the burden on public finance, and the incomplete integration of these part-time workers does not outweigh the advantages of low-cost labour.

Experimenting autonomy in university finances

Three universities in Lower Saxony—Oldenburg, Clausthal and the FH Osnabrück—will be experimenting with an independent system of book-keeping for the next ten years. German universities are financed by the federal states and individual expenditure titles are controlled by the state governments. This detracts from independent decisions made by the universities as to where and how their funds are spent. This new experiment will essentially autonomize university spending; after receiving a lump state sum, universities can decide internally how to spend the money. The aim of the experiment is to remove one hierarchical level from decisions on spending. A distribution of funds within institutions themselves is going to intensify internal competition on expedient ways of spending the budget.

Cuts in research spending

The federal government, under pressure to reduce spending, has cut DM250 million from its research budget this year. This represents a 2.64% reduction as compared to only just over a 1% reduction in the total federal budget. Such reductions are to be contrasted with the current talk about the competitive position of Germany in the international market. It appears to some critics that science, technology and education policies are on a self-destruction course. A strongly debated project

is a huge DM9 billion government-supported programme to initiate a magnetic train. Supporters argue that the project is an investment in the technological future of the country. Critics are not so sure, certainly from the point of view of putting a lot of eggs in one basket (see also Editorial).

A Ph.D. chance for FH graduates

Barriers between the two German systems—the Fachhochschule and the university—seem to be falling. According to new university regulations in the State of Baden-Württemberg, graduates of Fachhochschulen may continue studying towards a doctorate at the state's universities. The University of Stuttgart is offering this possibility in all faculties; Karlsruhe has been offering this possibility since 1992. The University of Freiburg offers continuation in forest technologies, and other openings are available at Konstanz and Heidelberg. Formally, specially qualified graduates will be accepted. In practice, the hurdles to be overcome by a graduate of the Fachhochschule to continue at a university have in the past been high. This has led to the development of an increasing flow of graduates for higher studies abroad, especially to the United Kingdom, where sometimes two years can be saved in obtaining the higher degree.

France

Emphasis on teaching besides research raises controversies

A working group set up by the Minister of Higher Education and Research, **François Fillon**, has come up with demands to meet the shortage of higher education teaching by allocating teaching assignments to research staff, including that of the Centre National de la Recherche Scientifique (CNRS). The report advocates closer links between industry and higher education and an emphasis on technology transfer. Its stress on the linking of research organisations such as the CNRS and higher education in teaching assignments has brought forward a wave of protests. In particular, universities protest against a teaching-only role. Softer voices can now be heard and the demand of turning some universities into teaching-only institutions has been toned down.

Russia

Trying to attract foreign students

With only 30,000 foreign students, Russia believes it has something to offer to students from abroad. A new effort to increase the number of students is being managed by the Inter-University Centre of International Education at the Moscow State University of Aviation Technology. Russia and other GUS states are also heavily involved in the European Union's TEMPUS-TACIS programme, with 57 pilot projects in higher education

linking Russia to Western Europe. Russia offers degrees in engineering for \$700 a year. Theoretical levels of Russian academics are high, and it is expected that with newly equipped laboratories, an attractive climate for higher education can be created.

USA

Engineering degrees—engineering technology on the decline

The Engineering Work Force Commission has published data on the numbers of engineering graduates in the USA in 1993. The total number of engineering degrees for all levels—from associate to doctorate—has increased from 120,351 in 1992 to 123,915 in 1993. This growth is due to an increase of degrees from engineering science institutions, which has offset a decline of graduates from engineering technology institutions. The number of Ph.D. degrees in engineering rose from 5958 to 6198. In engineering technology the number of bachelor degrees decreased from 10,205 to 9752. Some schools are closing down their engineering technology faculties and are establishing or integrating them into their engineering faculties. This declining trend is to be contrasted to the German situation where the support and development of Fachhochschulen is a current national trend. It may be asked whether current voices from industry in Germany, which want to change the ratio of hired Fachhochschule to technical university graduates, at present running at 2/3 to 1/3 to an even 50–50 distribution, are not related to the shift of emphasis, which can be seen on the horizon, by the industrialised nations from concentrating on production to development activities. If this is so, the government demand for more educational expansion should be shifted to the higher level institutions. Do we see here another out-of-step planning concept steered by officialdom? [See also **E. Wiebe** and **M. S. Wald**, trends in recruiting mechanical engineering students, *Int. J. Engng Ed.*, 9(5)] *Engineering and Technology Degrees 1993* can be obtained from the American Association of Engineering Societies 1111 19th St. NW, Washington DC 20036, USA.

Higher education standards criticised

A recent report by a group of business and education leaders—the Wingspread group—is sharply critical of the lack of control of higher education standards. It demands that institutions set entry and exit standards, and a core curriculum to ensure the competency of graduates. It recommends that accreditation agencies have a stronger say in university operations. Such measures are particularly objected to by elite institutions, which enjoy practically a complete autonomy on structuring their educational standards. With the tremendous range of standards in the country, it is obvious that top institutions feel uncomfortable at being

placed under the same state control procedures as less well endowed and independent institutions.

Nevertheless, the issue of accountability of higher education institutions is more general. The Clinton administration wants institutions to answer more directly to the people, which implies more government control. The issues has been triggered by financial questions, such as student loan defaults, student support allocation questions and high tuition fees. This financial implication indicates that reforms in higher education, as elsewhere, are related to economic constraints which surface when the weight of problems reaches a critical mass (with pardon to physical inaccuracies).

The report, *An American Imperative: Higher Expectations from Higher Education*, is available at \$14.95 from Johnson Foundation, PO Box 2029, Racine, WI, USA

Bridge in University of Nebraska laboratory

Engineering students constructed a 105 ton, 70 foot long bridge at the engineering laboratory of the University of Nebraska in Lincoln. The structure is designed to test bridge stability, and help the state roads department to assess the design and stability of the state's bridges. Structural tests will load the bridge with five times the weight of a heavy truck. After the tests the bridge will be loaded until it collapses.

Indiana centre for multimedia education

A centre for new educational technologies, the Wendell W. Wright Education Building, was inaugurated at Indiana University in Bloomington. **Howard D. Mehlinger**, the director, has proclaimed that the goal of the new centre is to establish a reputation that will save a lot of money for education in the future. Virtual reality and virtual texts are seen as future aids to education. A CD-ROM is available which lets users view successful lectures. The teachers featured on the CD are selected by the centre and by the North Central Regional Educational Laboratory in Chicago, which is one of ten such labs supported by the Department of Education.

China

Fees—is China showing the way?

We have reported on the practice of asking students in China to pay their own way through university. Fees for engineering students in Shanghai universities run to 2700 yuan (\$850) per year. This is a serious obstacle for many students coming from poorer backgrounds, and adds to the difficulty of obtaining a place in higher education, which is subject to fierce competition. Even state-financed students will pay up to 1000 yuan per year towards their tuition. Criticism of the tuition fee escalation is mounting, and the state commission on education has promised to undertake measures

to safeguard education opportunities for poorer students. These measures include tuition reductions and low rates for student loans. While tuition fees for students in Europe cannot be instituted due to political resistance, while the higher education system is groaning under the financial strains, China has been moving ahead towards some measures of financial support from direct tuition fees. In Germany, as reported above, students pay no fees, and can receive state subsistence support. In addition, surveys show that students support themselves with jobs during their studies—an interesting and debatable contrast to the situation in China.

Conferences

Calisce '94

Computer Aided Learning in Science and Engineering
31 August–2 September 1994
Telecom, 46 rue Barrault, 75634 Paris Cedex 13, France
Contact: Jean-Louis Dessalles
Tel: +33 145817870 Fax: +33 1 45813119
e-mail dessalles@enst.fr

The Development and Role of Women in Technology

21–23 September 1994
Beijing, China
Contact: Di Gibney, Faculty of Design and Technology, University of Central Lancashire, Preston PR1 2HE, UK
Tel: +44 772 893162 Fax: +44 772 892901

Visions and Strategies for Europe

Joint SEFI and IGIP Annual Conference
21–23 September 1994
Czech Technical University, Prague
Czech Republic
Contact: Jan Pozar, Department of International Relations, Zikova 4, 16635 Praha 6, Czech Republic
Tel: +42 2 332 3465 Fax: +42 2 311 9692
e-mail seig@vc.cvut.cz

Product Development in Engineering Education

Engineering Education Integrating Engineering Design, Management and Marketing
28–31 October 1994
University of Limerick, Ireland
Contact: Gaye Moynihan, Department of Mechanical and Production Engineering, University of Limerick, Ireland
Tel: +353 61 333644 Fax: +353 61 330316

3rd European Forum for Continuing Engineering Education

9–11 November 1994
Vienna, Austria
Contact: Dr Franz Reichl, Vienna University of Technology, Gusshausstrasse 28, 1040, Vienna, Austria
Tel: +43 1 58801 Fax: +43 1 5054961
e-mail Internet reichl@email.tuwien.ac.at

Fourth Triennial International Conference of the Association for Engineering Education of South East Asia and the Pacific

13–16 November 1994
Lae Papua New Guinea
Contact: Dr Nimal Subasighe, Department of Mining Engineering, PNG University of Technology, Private Mail Bag, Lae, Papua New Guinea
Tel: +675 43671 Fax: +675 457534

Third UNESCO World Conference on Engineering Education

14–18 November 1994
Cairo, Egypt
Contact: Dr Saad M. El-Raghy, Faculty of Engineering, University of Cairo, Cairo, Egypt

Sixth World Conference on Continuing Engineering Education

8–12 May 1995
Sao Paulo/Rio de Janeiro, Brazil
Contact: Professor Edith Ranzini, Escola Politecnica-EPUSP, Caixa Postal 8174, 01065–970 Sao Paulo-SP, Brazil
Fax: +55 118137415
e-mail wce95@lsd.usp.br

International Congress of Engineering Deans and Industry Leaders

3–6 July 1995
Monash University, Melbourne, Australia
Contact: Professor Z. J. Pudlowski, Faculty of Engineering, Monash University, Clayton, Victoria 3168, Australia
Tel: +61 3 905 4977 Fax: +61 3 905 6069
e-mail: zjp@eng.monash.edu.au

Fourth World Conference on Engineering Education

15–20 October 1995
Minneapolis–Saint Paul, Minnesota, USA
Contact: Dr E. R. Krueger, William C. Norris Institute, 245 East Sixth St., St Paul, MN 55101, USA
Tel: +1 612–225 1433 Fax: +1 612 225 1241
e-mail: wcnrex@epx.cis.umn.edu