UNESCO International Centre
for
Engineering Education

Newsletter

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From the Director

Engineering must be regarded as one of the highly creative activities that belong to the widely recognised technical culture of humankind, and as such, is a wealth-creating activity. Thus, it has a tremendous impact on humankind.

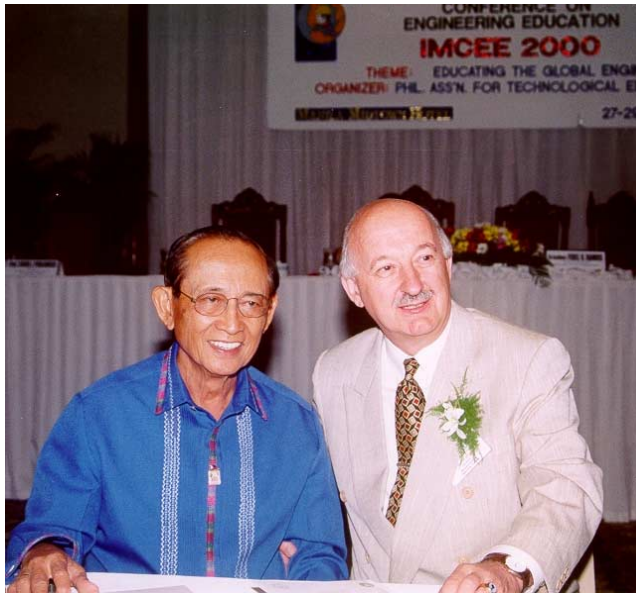
Engineering education has become one of the *avant-garde* activities to ensure progress, prosperity and peace. Accordingly, the recent decision of UNESCO to terminate the UNESCO International Committee on Engineering Education (ICEE) is difficult to comprehend, as the Committee had made considerable progress in this area.

Much has been said about the crisis in science and technology education, and the general lack of appreciation of science and technology, combined with the ever-reducing numbers of young people choosing these areas as their prime area of studies. This was so much so that UNESCO mobilised the best platform for the debate and action in order to remedy the situation.

The Centre has enjoyed over the last few years the intellectual and moral support from members of the ICEE, which was an amalgamation of extremely experienced engineering educators, representing vast expertise and cultural diversity so vital for the globalisation process of technology education.

It is my belief that the Director-General must have been grossly misinformed about the activities and achievements of the ICEE, and it is hoped that taking into account the importance of engineering education within UNESCO, he will reconsider his decision, and engineering education will return strongly to UNESCO's agenda. By parity of esteem, engineering should have at least one representative advisory committee, when science enjoys so many.

You will find a news item elaborating on this matter elsewhere in this Newsletter.



The photo shows Mr Fidel V. Ramos, Chairman Emeritus of the RPDEV, and Prof. Zenon J. Pudlowski, UICEE Director, during the brief discussion carried out at the Conference.

Millennial Conference

An *International Millennial Conference on Engineering Education* (IMCEE2000), under the theme of *Educating the Global Engineer*, was held in Manila, Republic of the Philippines, between 27 and 29 January 2000. The Conference was organised by the Philippine Association for Engineering Education (PATE), with Mr Fidel V. Ramos, the Former President of the Republic of the Philippines (1992-98), and a hero of the 1986 Philippine peaceful revolution, as the Guest Speaker. The Conference attracted over 200 participants from almost all schools and colleges of engineering in the Philippines and about a dozen international academics. A volume of Conference Proceedings was produced, which included 34 papers.

The UICEE Director, Prof. Zenon J. Pudlowski, was invited to the Conference as a *Special Guest* and delivered a keynote address titled *A Global Engineer for the 21st Century*. He also presented the UICEE to the participants in an *ad hoc* address titled *Networking in Engineering Education: the Activities and Achievements of the UICEE in 1999*, delivered at the Closing Ceremony.

Since the UICEE follows the UNESCO's *raison d'être* *…to contribute to peace and security by promoting collaboration among nations through education, science and culture…*, and in our case through engineering education,

UICEE Partners

the Director had the opportunity to discuss with former President Ramos the possibility of collaboration between the UICEE and the Ramos Peace & Development Foundation (RPDEV).

Russian Connection

The UICEE is enjoying a warm relationship with Russian engineering academics through its excellent contacts with officers and members of the Russian Association of Engineering Education. Just recently, two outstanding Russian institutions have joined the UICEE and become members of the so-called *UICEE Family of Engineering Educators*.

The first institution to join the Centre in 2000 as a Supporter Member was the Tomsk Polytechnic University, Tomsk, Russia. This is a prime technical university in Siberia, and operates under the leadership of Professor Yuri Pokholkov, who is Rector of the University.

The second was the Tambov State Technical University in Tambov which has joined the Centre as a Contributing Member. This is reinforced by an expanding base of individual Russian academics, who have joined as individual members. From this, the Centre has built an efficient and growing network of contacts for its dealings with Russia.

As a result of this liaison with Russian academia, the Centre is planning to establish a series of international seminars to be run in Russia every year, under the common theme of *Russian Seminar on Engineering Education*.

The first seminar of this series is called *1st Siberian Seminar on Engineering Education*, which will be held in Tomsk between 7 to 12 September 2000. The Seminar announcement can be found at the UICEE home page.

Additionally, preparations have commenced for the *2nd Russian Seminar on Engineering Education*, to be held at the Tambov State Technical University in September 2001, with many international organisations and individuals set to participate.

The UICEE invites other potential hosts in Russia to contact the Centre to express their interest in running future seminars.

Annual Conference

The *3rd UICEE Annual Conference on Engineering Education* was heard at the University of Tasmania, in Hobart, Tasmania, Australia, between 9 and 12 February 2000. It was a memorable experience for UICEE members and associates who gathered in Hobart to discuss issues of importance to engineering education, the activities of the UICEE, and indeed the main theme of the Conference. This theme targeted *Collaboration in Engineering Education* on a worldwide basis.

The Conference also suggested some new directions and activities to be undertaken by the UICEE. From the UICEE point-of-view, it was an extremely successful event that was attended by over 120 participants, representing 26 countries worldwide.

Professor Don McNichol, Vice Chancellor and Principal of the University of Tasmania, opened the Conference, which was held in the University Centre.

A volume of Conference Proceedings was produced with 89 papers included, covering a wide range of topics relevant to global engineering education. Some of the key Conference topics included: international collaborative programs and systems; innovation in engineering and technology education; engineering and technology education in other countries; and multimedia in engineering education.

There are still a few copies of the Proceedings left, which may be purchased from the Centre.

Badge of Honour Awards

Four international academics received the Silver badge of Honour Awards during the Conference Banquet, which was held aboard the *M.V. Cartela*. The UICEE's Silver Badge of Honour is awarded for *distinguished contributions to engineering education, outstanding achievements in the globalisation of engineering education through the activities of the Centre, and, in particular, for remarkable service to the UICEE*.

The recipients of this award were: Ms Sumniang Natakuatoong of the Rural Technological Department of Thammasat University, Bangkok, Thailand; Professor Derek O. Northwood, Dean of the Faculty of Engineering and Applied Science, and Professor William E. White, former Dean of the same Faculty at the Ryerson Polytechnic University, Toronto, Ontario, Canada; and Professor Finn Kjersdam, Dean of the Faculty of Engineering and Science, Aarlborg University, Aarlborg, Denmark.

Staff, students and associates of the UICEE wish to congratulate the awardees on the occasion of receiving this prestigious UICEE award.

Best Paper Awards

Participants of the *3rd UICEE Annual Conference on Engineering Education* again selected papers, which had been included in the volume of Conference Proceedings, for the UICEE Best Paper Awards. The awards include five categories: Diamond, Platinum, Gold, Silver and Bronze.

Again, five papers were chosen on this occasion, with two equal Diamond awards going to G.R. Johnson of the National Technological University in Fort Collins, the United States of America; and G.R. Burns and C.U. Chisholm of Glasgow Caledonian University in Glasgow, Scotland, United Kingdom.

With two equal first Diamond awards, there was no Platinum award given, and three papers received equal next highest frequency of selection, and were awarded equal Gold awards. These Gold award papers were conferred upon: C. Niklasson and S. Irandoust from Chalmers University of Technology in Göteborg, Sweden; M.S. Zwyno and J.K. Waalen of the Ryerson Polytechnic University in Toronto,

Canada; and J.L. van der Molen, A.D. Prederbon, N.Pijper and F.J. Lane from the University of Melbourne, in Melbourne, Australia.

The selection process was not easy, as the Proceedings included many excellent papers. Expanded versions of these award papers will be published in the *Global Journal of Engineering Education* in the near future.

ICEE Axed

The recent change in the management of UNESCO with the election of the new Director-General has resonated with some change in emphasis on the organisational structure and activities of UNESCO. This was confirmed with the request to the Director-General from the 158th Executive Board of UNESCO in November 1999 to reduce the number of Advisory Boards of UNESCO.

Accordingly, the newly installed Director-General, Mr Koichiro Matsuura, abolished the International Committee on Engineering Education (ICEE) on 14 January 2000, with Dr M. Iaccarino, Assistant Director-General for Science informing Prof. Hans Peter Jensen, Chairman of the ICEE.

The former Director-General, Dr Frederico Mayor, established the ICEE in June 1996 as a reincarnation of its predecessor, the UNESCO Steering Committee on Human Resources Development for Technical Industry Stimulation, and to facilitate engineering and industrial education on a global scale.

This original Steering Committee was esstablished in mid-1992 and formulated an action-oriented agenda with eight priority areas identified. These were: sister university programs; university-industry co-operation; database on engineering education, clearinghouse on equipment and courseware; completion of degrees; education standards/equivalency; use of satellite technology; and worldwide organisations.

The committee advocated for, and was supportive of, the establishment of the UNESCO International Centre for Engineering Education (UICEE), which was one of its best achievements.

Graduate Courses

Last July, an invitation was circulated globally via the Internet to individuals and faculties to take part in the development of graduate courses in engineering education.

The need for such courses has been long recognised by those involved in engineering education, and has been brought about by the recent influx of new technologies, particularly multimedia and the Internet.

The concept of the university as a research organisation has created a situation in which academic institutions are the only education establishments that allow their teaching personnel to undertake educational activities without any formal teaching qualification and preparation. It is unthinkable that other professions would permit unqualified individuals to practice.

A two-day workshop concerning the programmes was held between 7 and 8 February 2000, prior to the *3rd UICEE Annual Conference on Engineering Education* at the University of Tasmania, Hobart, Tasmania, Australia, with over 30 international academics attending. The interest shown in the project and the attendance at the workshop has been remarkable.

The objective of the courses is to provide the many professional engineers who are involved with engineering education and industrial training with an important additional qualification.

At this point, the first two stages have been accomplished, with the design of the three individual courses and the set of concise subject syllabi. Workshop participants discussed the course structure and the subject syllabi. Developers of individual subjects were identified and then each group commenced the development of a set of extended subject syllabi, which will consist of methodological units within each subject.

It was decided that the comprehensive subject syllabi will be supplied to the UICEE in March, and that the development of individual subjects would continue with a possible presentation at the next workshop. The next workshop is likely to be organised in conjunction with the *2nd Global Congress on Engineering Education*, with the objective to finalise the entire development in 2000 so that the courses would be offered in late 2000 or early 2001.

2nd Global Congress

Preparations are underway with the *2nd Global Congress on Engineering Education* to be held at the University of Wismar in northern Germany, between 2 to 7 July 2000. Over 160 paper proposals have been received from all corners of the world, and papers are coming in.

UICEE members and those who have strong interests in engineering education should consider attending the Congress, which will be held in the old Hanseatic town of Wismar, surrounded by the lovely scenery of the Baltic coast.

Caledonian Centre

The Caledonian Centre for Engineering Education (CCEE), a satellite centre of the UICEE which was set up at Glasgow Caledonian University, Glasgow, Scotland, in September 1998, has recently expanded the range of its activities. These now include designing, implementing, and delivering programmes of study in the workplace at undergraduate and postgraduate levels, and has stimulated the involvement of other Departments.

The idea of work-based learning as a service to industry has gained considerable momentum in the United Kingdom with Glasgow Caledonian University being the key player. In particular, Prof. Colin U. Chisholm, Dean of the Faculty of Science and Technology, and Dr George Burns, the CCEE Co-ordinator, have developed a Postgraduate Learning Contract Framework which is based on the workplace learning.

The whole concept of workplace learning has attracted a lot of attention at UICEE-organised Conferences. This is so much so that a paper co-authored by these two academics titled *Quality Assurance Issues Relating to the Delivery of Work Based Learning Programmes* received one of the two Diamond awards (first grade) for the Best Paper presented at the recent UICEE Annual Conference in Hobart.

Ryerson Centre

The Ryerson Centre for Engineering Education (RCEE), a North American satellite centre of the UICEE, is to be set up at the Faculty of Engineering and Applied Sciences at the Ryerson Polytechnic University, Toronto, Ontario, Canada.

The objective of the RCEE is intended to provide a focus for the development of academic and research-related activities in engineering education across North America, and where more appropriate, to work within the UICEE to advance the globalisation of engineering education.

It is envisaged that particular emphasis in the work of the Centre will be placed on research development and the application of multimedia in engineering education.

A proposal for the development of the RCEE was presented by Prof. Derek O. Northwood and Prof. William E. White at the UICEE Annual Meeting carried out during the recent Annual Conference in Hobart.

The picture above shows Prof. C.U. Chisholm (l) and Dr G.R. Burns (r) receiving their awards from Prof. Peter Darvall, Chairman of the UICEE Academic Advisory Committee.

Baltic Region Seminar

Following the success of previous seminars held annually in that region, a *4th Baltic Region Seminar on Engineering Education* will be held at the Technical University of Denmark (DTU), in Lyngby, Copenhagen, Denmark, from 1 to 3 September 2000. The objective of the Seminar is to bring together educators from the Baltic region to continue dialogue on problems in engineering education, and foster the co-operation and friendship already established.

The Seminar announcement can be found on the UICEE's homepage, under *Conferences and Meetings* .

1999 Annual Report

The UICEE's 1999 Annual Report provides comprehensive information on the diverse and extensive activities carried out by the UICEE over the past year. Readers will be able to see that 1999 was a year of excellent progress and evolution for the Centre. It is available on the UICEE's website, under *Reports*.

German Issue of the GJEE

A special issue of the *Global Journal of Engineering Education* (GJEE) entirely in the German language is planned to be published in conjunction with the *2nd Global Congress on Engineering Education*. Prof. Norbert Grünwald, Dean of the Faculty of Mechanical and Environmental Engineering at the University of Wismar is Guest Editor of that issue.

A call for papers was circulated in late 1999 throughout Germany, and several excellent papers have been received.

It is paramount that a wider group of engineering educators, those using the German language as their working language, should take part in the exchange of information on engineering education using the GJEE. The Centre is delighted to facilitate this enterprise.

Any potential contributor should contact Prof. Grünwald.

Urban Design Update

The UICEE's Urban Design Education Programme (UDEP) is vigorously pursuing its activities for the benefit of the local and global communities, and a number of projects has recently been undertaken.

Leading by Design – Managing for Better Urban Environments is a day-long short course for councillors and executives which has been developed to run in April 2000. Other exciting projects, such as urban design studios supported by international urban design leaders, and research into international best practice, are being undertaken.

New Partner in India

At the *3rd UICEE Annual Conference* in Hobart, negotiations began with Prof. A. Kalanidhi, Vice-Chancellor of Anna University, Chennai, Madras, India, and the UICEE Director. These negotiations tackled the possibility of establishing a partnership between Anna University and the UICEE, with the view to establishing the South Asia Centre for Engineering Education at Anna University, as a satellite centre of the UICEE. Prof. Kalanidhi presented a comprehensive proposal on this venture to the Annual Meeting of the UICEE, and it is hoped that the talks will soon conclude successfully.