

FIRST YEAR OF ACTIVITIES OF THE NATIONAL MONITORING COMMITTEE OF IGIP POLAND

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Abstract — Majority of European countries has joined the International Society of Engineering Education (IGIP) - the certifying organisation for engineering educators some years ago. Poland seems to be one of last European countries which joined the IGIP only about a year and half ago. The National Monitoring Committee of IGIP Poland has formally started the activities in January 2001. Its main headquarter was located at the Faculty of Materials Science, Metallurgy and Transport in the Silesian University of Technology in Katowice. The paper has described actions done by the NMC -IGIP Poland in last twelve months. During this rather short period of time four professors from the Silesian University of Technology have received a title of the European Engineer Educator (ING-PAED-IGIP). A special course for professors from other Polish technical universities has been conducted. 13 of them representing five Polish technical universities from Czestochowa, Gliwice Kraków, Warszawa and Wroclaw have graduated the IGIP format studies realising the first step in process of the certification by IGIP. Several papers were published trying to inform teachers of technical subjects about main goals of the IGIP. Some efforts were made to create a consortium to work together within European programmes.

Index terms — continuing education, IGIP Poland, engineering educators

INTRODUCTION

The continuous progress in technical sciences particularly important in case of such high-tech disciplines like nanotechnology, bioengineering, computer sciences or information technology but necessary also in other disciplines influences in the necessity for ongoing continuing education. This kind of education offered by academia has been typically realised in a form of post-graduate studies. Of course in case of offer prepared by technical university it has been pointed mainly to industrial managers [1].

From the other side it has been observed a real niche in continuing education of engineering educators, for whom it has been obligatory to make up their knowledge and to enable the high level of teaching. The supervision and the control of the quality of engineering education, among engineering educators, have been

the task of proper organisations, which award certificates for people and scientific institutions, as the proof of the fulfil of appropriate requirements as to the range of technical and didactic knowledge. Within the domain of qualifications and pedagogic education of the teachers-engineers, teaching technical subjects in schools of different levels, the International Society of Engineering Education located in Klagenfurt, Austria seems to be an appropriate certifying organisation.

In Polish conditions training of engineering educators has been especially important due ongoing reform of the education system in the country. The paper describes efforts done by the National Monitoring Committee of IGIP Poland (the NMC-IGIP Poland), which has formally started the activities in January 2001. The main headquarter was located at the Faculty of Materials Science, Metallurgy and Transport in the Silesian University of Technology in Katowice.

CHANGES IN EDUCATION SYSTEM IN POLAND

A reform of the education system in Poland, is one of four big reforms that have been introduced since the beginning of the 1999. At the first stage it involves changes in the system of education at primary and secondary level. Besides typical secondary technical schools have been appeared so-called specialised technical lyceum. In some cities like Rybnik and Wroclaw new specialised lyceum replaced old secondary technical schools. Changes in system and the organisation of higher education in Poland, will be possible after the modernisation of the present, being in force since 1991, Higher Education Act.

Continuing education is supposed to be an important form of education in the system. It has been intended either as a supplementary education for the adults, who, for various reasons, were out of the general education path for the youth, or as the opportunity to make education up enabling to acquire new qualifications in order to get a new job or to be promoted. All of the schools could have the character of the public school (fully financed by the budget and with no fee) or non-public schools (supported by the subsidies from the budget jointly with the school fee).

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The reform of education system in Poland has completely changed the former path of teachers' professional career. Teachers of primary and secondary schools have been designated, in accord with the present Polish "Teachers' Charter" to one of mentioned below positions:

- teacher trainee,
- contracted teacher,
- senior teacher,
- Chartered teacher.

In case of two upper groups of teachers their employment is only for a specific, short period of time (1-2 years for teacher trainee, 3 years for contracted teacher). For senior teachers and chartered teachers employment is on the basis of appointment.

The support of teacher's career – either from the financial side or professional promotion – is one of the most important factors, having crucial significance for the success of the reform of education at every level. One of the basic conditions of promotion for the secondary school teachers is to obtain the post-graduate course diploma from the school, officially approved by Ministry of Education. Also, this kind of diploma ought to be required when running for enrolling in the list of Ministry of Education Experts, who will be the examiners at the new (European) maturity exams. First pupils could pass new maturity exams this year, but entering of the new examination system for all graduates was removed for future.

The different situation appears in Polish technical universities. Gained scientific degree decides of the perspectives of professional promotion. At the certain stage of professional career e.g., it was necessary to graduate from post-graduate pedagogic studies to gain the highest rank of professor's assistant. Nowadays it is not obligatory any more. Currently university management has considered, introducing "Post-graduate pedagogical Studies" as an alternative form of supplementary courses in PhD studies, for those students who intend to be university teachers in the future.

EXPERIENCES AND ACTIVITIES OF THE NATIONAL MONITORING COMMITTEE OF IGIP POLAND

To match the new requirements connected with ongoing reform of the Polish education system as well as with future access of to the European Union Poland should co-operate closely with international organisations dealing with standardisation of the level and qualifications of engineering educators. By 2000 Poland was probably one of the last European countries, which do not collaborate with the International Society of Engineering Education IGIP, international organisation located in Austria which work on these issues. It was not until the second half of the 90's when the importance of the ongoing supplementary education of the educators, teaching engineering subjects in universities and technical secondary schools, has been noticed. Up to 90's the issue of confirming professional qualifications by acquiring the diploma of European Engineering Educator – ING-PAED-IGIP, awarded by the IGIP - International Society for Engineering Education, had not been known in the community of Polish teachers of engineering subjects. No sooner than in the end of 1999, taking example from our colleagues from the Czech Republic (especially from Technical University in Ostrava), the efforts has been made in Poland, to enter this prestige organisation, associating

engineering educators from many countries in the world. The importance of substantial help from Czech universities (TU-Ostrava as well as TU-Liberec), which was given to Poland to introduce to the international community of engineering educators, should be stressed here.

As it was mentioned above only in the year 2000, a group of professors from the Faculty of Materials Science, Metallurgy and Transport of the Silesian University of Technology has decided to enter the IGIP. As a results of their efforts and support of the President of IGIP prof. dr. Adolf Melezinek and the European Monitoring Committee of IGIP (EMC), the National Monitoring Committee of IGIP Poland was established. It consisted of representatives of four Polish technical universities: Silesian University of Technology in Gliwice, Technical University of Wrocław, Technical University of Szczecin and Academy of Mining and Metallurgy in Kraków. Practically the NMC-IGIP Poland began activities only in January 2001, at its inaugural meeting which take place in Katowice. The NMC - IGIP Poland has been presided by prof. Wilibald Winkler former Rector of the Silesian University of Technology. Prof. Sylwester Markusik has taken a position of Secretary General of NMC-IGIP Poland. The main headquarter of the NMC-IGIP Poland was located in the Faculty of Materials Science, Metallurgy and Transport of the Silesian University of Technology in Katowice. During the inauguration meeting of the NMC-IGIP Poland an organisation charter was accepted and an action plan for next years was elaborated. Basic points of the action plan were described below

Post-graduate course on IGIP standards organised by the NMC-IGIP of Czech Republic

A first step of the action plan was a set of activities connected with getting of accreditation for organising in Poland post-graduate studies for engineering educators based on IGIP standards. It was decided that the Silesian University of Technology should be the first Polish institution delivering such kind of the studies So it was necessary to obtain the accreditation to run this type of studies, as the first one in Poland. But any scientific unit applying the accreditation of IGIP should have among its academic staff members educators, having the title of European Engineering Educator. The NMC-IGIP Poland has decided to ask Czech colleagues from the NMC-IGIP the Czech Republic to organise a post-graduate pedagogic course on IGIP standards for four academic staff members of the Faculty of Materials Science, Metallurgy and Transport of Silesian University of Technology. Between the year 2000 and 2001, the Technical University of Ostrava and the Technical University of Liberec have organised pedagogic studies, taking place by turns in the Czech Republic (Ostrava) and in Poland (Katowice, Szczyrk), within 204 didactic hours and covering the program of teaching in accordance with IGIP requirements. After termination of the training cycle, four academic teachers of Silesian University of Technology have obtained the diploma of pedagogic IGIP post-graduate course and filed necessary documents at the NMC-IGIP the Czech Republic, having moved the conferring of European Engineering Educator ING-PAED IGIP title by the EMC IGIP. This has entered entrance to the IGIP register. Finally the following professors of Silesian University of Technology have obtained ING-PAED IGIP diplomas at 30th anniversary IGIP Symposium in Klagenfurt, in September 2001: Jerzy Barglik, Adam Hernas, Sylwester Markusik (Secretary General of NMC-

IGIP Poland) and Czeslaw Sajdak (Dean of the Faculty of Materials Science, Metallurgy and Transport).

them officially during the opening ceremony at the 31st IGIP Symposium in Sankt Petersburg (Russia), in September 2002.

Accreditation for the Silesian University of Technology

The next important step in the development of the idea of IGIP in Poland, was working out by the Silesian University of Technology the application form of accreditation for running post-graduate studies for engineering educators, in accordance with IGIP standards. The application form was sent to the EMC-IGIP in November 2001. The EMC-IGIP, at the meeting in May 2002 in Lugano (Italy), awarded to the Silesian University of Technology the status of accredited unit to run post-graduate studies, based on IGIP requirements in the range of pedagogic knowledge for technical educators. President of the IGIP prof. Adolf Melezinek officially inform about that during the meeting in Katowice in May 23, 2002. The accreditation certificate will be handle to the Rector of the Silesian University of Technology or authorised representative during the 31st anniversary IGIP Symposium in Sankt Petersburg in September 2002.

First pedagogic course on IGIP standards for 13 professors

Simultaneously, even before obtaining the accreditation of EMC-IGIP for running post-graduate pedagogic studies by Silesian University of Technology the first pedagogic IGIP post-graduate studies for academic teachers of Polish technical universities were organised. 13 professors from 5 technical universities have participated in the studies. 12 of them have represented technical universities from Kraków, Warszawa, Czestochowa and Wroclaw. The last participant was the vice-dean for Education of the Faculty of Material Science, Metallurgy and Transport of the Silesian University of Technology (elected in May 2002 for a position of the Dean of Faculty for years 2002-2005). A main goal of the studies was connected with idea to initiate soon the next training centres located in technical universities in different parts of Poland and obtaining IGIP accreditation also for them. The first post-graduate studies on pedagogical issues based on IGIP standards at the Silesian University of Technology lasted from October 2001 until the end of April 2002. As it is mentioned above 13 academic educators, running engineering teaching in their technical universities have taken part in it. On the 23 May 2002, in the attendance of the President of the EMC-IGIP Prof. Dr. Adolf Melezinek, the ceremony of handing diplomas of graduating from the first post-graduate studies, based on IGIP standards took place at Silesian University of Technology in Katowice. The presence of deputy of the Inspector General of Schools of Silesia Province, the President of the NMC-IGIP-Poland, Prof. Dr. Wilibald Winkler added splendour to the ceremony. Also attended promoter of Poland in the IGIP organisation, prof. dr Stanislav Antonicky from the Technical University of Ostrava (the Czech Republic). 6 academic educators from the Academy of Mining and Metallurgy of Kraków, 3 academic teachers from Technical University of Wroclaw, 2 from Technical University of Warszawa, and 1 from the Technical University of Czestochowa and the Silesian University of Technology of Gliwice have graduated the studies. Nowadays total number of owners of the European Engineering Educator title in Poland increased up to 17 persons. The graduation certificates were handed after the decision of the EMC-IGIP in Lugano, awarding diplomas of ING-PAED IGIP for the participants of the course. The certificates will be handed to all of

How to organise next studies ?

A larger scale post-graduate training programme in Poland could begin in the year 2003. It should be directed especially to engineering educators of technical secondary schools. It relates to the reform of education system in Poland, whose second stage has been realised at present. The reform of education in Poland, apart from advantages also brings some disadvantages and problems for educators, especially connected with inevitable reduction of employment. To preserve a job in new, reformed secondary school in Poland, teachers (including educators-engineers) will be forced to modernise and to perfect their knowledge and pedagogic skills. It is a good prognosis for the NMC-IGIP Poland intentions concerning initiating of post-graduates studies for teachers of engineering subject. The market of this type of courses in Poland may be big. It is also possible to assume that a part of educators-engineers, after graduating from this type of post-graduate course, will try to obtain the title of European Engineering Educator ING-PAED IGIP. This type of studies should be however financed by educators itself, which at present is one of the poorest professional groups in Poland. It may be assumed with a big dose of probability that educators-engineers will not be able to finance their studies on their own. This is a serious problem for the NMC-IGIP Poland, how to support additional education of teachers of engineering subjects in Poland. The problem will have to be solved in Poland in the nearest future. It is the next challenge for the NMC-IGIP Poland.

Other activities

The condition of succeeding in entering the reform of education in Poland is lightening it from the financial problems. Except for the advantages, the reform brings a number of problems for teachers, first of all associated with the inevitable reduction of employment (about 70 thousand teachers are foreseen to lose job in next two years). To keep their job in a new, reformed school in Poland, teachers (including of course teachers of engineering) will be forced to upgrade and to enrich their knowledge and pedagogic skills. This is a good outlook for the intentions of the NMC-Poland, as to initiating the post-graduate IGIP format studies, as an offer for engineering teachers. It is expected that the market for this kind of training courses may be big. It is also possible to assume that a part of engineering educators, after graduating from these post-graduate courses will make efforts to obtain the title of European Engineering Educator. These sort of studies, however, ought to be self-financed by the teachers, who are currently one of the poorest professions in Poland. Nevertheless, the engineering teachers are very likely not to be able to finance the studies on their own. Than, the problem for the NMC-IGIP Poland arises, how to financially support the supplementary pedagogic education of the engineering teachers in Poland. For activating and promotion of these activities in Poland, first, it is planned [4]:

- A claim for a grant from Ministry of Education, which annually finances initiatives of Polish universities within the range of new techniques, areas and contents of professional training for teachers. The grant of this kind will enable to start with the second post-graduate IGIP format studies at the Silesian University of Technology in the autumn of year

2002, among others, through working out proper didactic materials. This is, however, one-year financial support, so making an assumption that the participants will cover 30% of the overall cost of the studies, it will enable to organise two courses in the year 2003.

- To work out, together with other universities from the neighbourhood countries some projects to the international programs. A consortium consisting of the Silesian University of Technology Poland, Technical University Ostrava Czech Republic, Technical University Liberec (Czech Republic), Technical University Wiesbaden (Germany) University of Kristianstad (Sweden) and Technical University of Tallin (Estonia) were established. The attendance in European programmes would enable to secure financial resources for its participants for running the post-graduate studies with similar curricula match IGIP rules.

CONCLUSIONS

Continuing education of engineering educators seem to be very important element of changes in Polish education system with accordance with EU regulations. It needs a close collaboration with international organisation like the International Society of Engineering Education IGIP. Poland became a new IGIP member only a year and half ago.

An important element in the process of entering IGIP organisation structures in Poland was the post-graduate pedagogic IGIP format studies organised at the Silesian University of Technology in for academic engineering educators from other technical universities. Such first course was terminated on April 2002. The educators graduated the studies will be the basic scientific staff for next regional centres, running pedagogic IGIP format training courses for teachers of engineering.

The problem of wide pedagogic training, in accordance with IGIP requirements, for engineering teachers in secondary schools in Poland, is very important because of the necessity of entering common education standards before joining European Union by

Poland. A part of such trained engineering teachers in Poland, after fulfilling additional criteria, will be able to run for the title of European Engineering Educator, which may determine their further professional career or enable them to find a job in educational system of European Union.

Owing to the fact, that engineering teachers in secondary schools are a professional group of relatively low financial position in Poland, they will not be able to cover all the costs of IGIP format studies on their own. The success of this kind of training courses, improving engineering teachers' pedagogic skills, will require financial support coming from the sources of Ministry of Education or from international grant.

During first year of activities the NMC-IGIP Poland has noticed a few successes. The most important of them seem to be:

- Achieving of the European Engineering Educator title by 4 persons,
- Accreditation of the NMC-IGIP Poland and the Silesian University of Technology as a certified training institution
- Organising of post-graduate studies for 13 professors from 5 technical universities and starting of certification procedure for them.

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