

Pedagogical Network for Engineering Education in Denmark (IPN)

Ole Vinther
IPN
Lautrupvang 15
DK-2750 Ballerup
Denmark
e-mail: ov@cph.ih.dk

Abstract - Danish engineering educational institutions have created a unique partnership within staff development. They have established a network called IPN.

IPN is a network for the pedagogical and didactic quality development of all Danish engineering education institutions. It is a three year project and was established in September 1996.

This article describes the network, its results after two years and finally discuss it as a tool for quality development.

Introduction

IPN, in Danish *Ingeniøruddannelsernes Pædagogiske Netværk*, is a network for the pedagogical and didactic quality development of all Danish engineering education institutions: two universities and six colleges.

Background and Objective of the Pedagogical Network

IPN was established on the 1st September 1996. The network is a three year project financed by the ministry of educations so called "quality improvement" pool.

The objective of the network is to strengthen the development of the pedagogical and didactic quality within engineering education by:

- acting as initiator and coordinator for pedagogical and didactic developmental activities.
- providing education within the field for adjuncts, lecturers and other teachers.
- collecting and disseminating information concerning pedagogy.
- to create a forum for the exchange of ideas and experience from both home and abroad between universities and institutions.

The network is composed of one member from each of the engineering education institutions: Aalborg University (AAU), Technical University of Denmark (DTU) and six engineering colleges.

Each institution has a member employed part time, 20% of full time, for this purpose although the undersigned is employed full time as day to day manager.

A governing body has the overall responsibility.

IPN offers:

Course Activities

Foundation courses for adjuncts, lecturers and other teachers will be a principal activity of the network. Based upon experience from the existing selection of courses at the various institutions, the network will develop courses further, especially for newly employed teachers but also for lecturers and temporary teachers.

The experienced teachers are often the real decision makers. This is partly due to their experience and partly due to their positions on boards and committees. In the case of this group, there is a need to develop attractive courses or workshops which take their experience into account but also offer new pedagogical and especially didactic knowledge. Technological supported teaching, for example, requires new pedagogical considerations which can be worked out both as course and development activities.

We are now running pilot workshops for inspiration of this group - and will invest more effort and money in this area in the near future.

Research and Development Work

The network will draw upon the existing research. Because the network is a three year project, it is not considered realistic to establish a research environment - with regard to both economy and time. However, this does not prevent the network acting as promoter and consultant in connection with pedagogical research activities at institutions which desire this.

It is possible to apply to IPN for pedagogical and financial support for smaller development projects and right now IPN is in the process of the first round of offers. Many applications are expected which more or less have come from the evaluation processes.

Information Activities

A news magazine, IPN-nyt, which informs and discusses what is happening in the field is published three times a year. A homepage on the internet will provide the most up to date information concerning courses, seminars etc. (in Danish but with a short introduction in English).

It is not always scientifically supported facts that teachers ask for with regard to new methods for teaching. Many are just looking for ideas for alternative forms of teaching. Whether or not the effect of this new form is scientifically proven is, for them, of less importance than how the new form works for

them. For the same reason, the experience of others with new forms of testing, organization and studying is a valuable source for a teachers renewal.

In addition, the network is obliged to collect knowledge within the entire didactic and pedagogical field, i.e. about teaching experience, development work and research activities. Specific examples could be concerning collegial guidance, tutor and mentor arrangements. Such experience is maturing in other places but is still in its infancy within engineering education.

Seminars

IPN organizes seminars which appeal to the experienced teaching staff and address relevant topics such as e.g. project organization and problems with overcrowded curricula. Wherever possible, the seminars are held in conjunction with other Danish networks and organizations, e.g. The Society of Danish Engineers.

SEFI (European Society for Engineering Education) also organizes seminars and conferences both in Denmark and internationally. Many staff members now participate in these arrangements which can be strengthened by additional cooperation in the network.

Current Activities

IPN is in full progress with the first activities. One of them is the first foundation courses for new teachers. A foundation course consists of a four day residential course with a subsequent three to four month period with smaller projects at the place of employment. This is then followed by a three day residential course.

The first workshops have also been arranged: one concerning Problem Based Learning, another was concerned with the students' personal development throughout the education.

Finally, seminars on design in engineering education and information technology have been held in cooperation with The Society of Danish Engineers.

IPN is also involved in a development project, in cooperation with Aalborg University, which is partially funded by CTU, the Center for Technology

Supported Teaching. Courses about project work and project supervising are currently offered to institutions and departments involved in transformation from discipline oriented curricula to more projectwork.

What happened to the students!

All these words and the students have hardly been mentioned. How can this be in harmony? The main issue is the improvement in the quality of education for the students so therefore they have a very central role. Even so, IPN activities are considered to be a direct shot in the arm for teachers and planners. This does not mean that the students shouldn't be involved in IPN. All lectures are open to the public and thus students can participate freely. In addition to this, an attempt will especially be made through the students' organizations to create a debate and also common activities.

Financing

IPN cannot offer participation in all arrangements for free. However, less extensive seminars and workshops can be offered for free and courses will be reasonably priced.

IPN's share in development and research activities will be negotiated on a case by case basis with the partners concerned.

We believe that we can contribute our share to an improvement in quality in the pedagogical and didactic field. At the same time, we hope for a fruitful and constructive cooperation with all partners.

IPN as a tool for quality development

IPN will, of course, meet all the historical difficulties with pedagogical staff development.

We will find a number of staff members having a different priority in their interests, e.g. the professional interest in their research. However, we believe that if we work with the most interested staff and students - we have something to offer in proactive quality development.