

## Supervision in Focus

### Abstract

#### Background

From an external point of view the PhD education at the School of Chemical Engineering at Chalmers works very well. The output in terms of PhD degrees and Licentiate degrees is high and the median study time is close to five years. There are relatively few PhD-students that leave without a degree. Although, we know that there are problems. One of the major problems according to the PhD-students is the supervision (too little, too occasional, too low priority, too much pressures, not structured, or even, too much). The supervisors and the PhD-students expectations on the PhD-education are not always coherent.

This project tries to focus on what is of common interest for the supervisor and the PhD-students. Both categories are definitely interested in an examination according to the schedule and a thesis of high quality. This means that everybody is actually interested in a supervision that works well. Why is then the supervision an area of problems?

With the common interests as a basis, the project "Supervision in focus" tries to increase the communication between the students and the supervisors. The overall aim of this project is to create a milieu that is beneficial for development of a better supervision and thereby a more fruitful PhD education as a total. All activities are therefore open for both supervisors and PhD-students. One main aim is that everybody shall become aware of the reasons for differences in approach and discuss them in an open-minded atmosphere. We believe that the meetings and discussions between supervisors and PhD-students will make development possible.

#### Specific goals

- To get mutual understanding for the roles that supervisors and PhD-students play in the process of research-education,
- to create a good climate to ensure that PhD-students and supervisors are on speaking terms with each others,
- to make the supervisor become more confident in their supervision,
- to give the young, new supervisors a good start by introducing a mentor system for them, and

- to increase the PhD-students engagement in the process of development of their own education.

### The activities

1. Four general activities, for PhD-students and supervisors that illuminates different approaches on supervision.
2. One specific activity for departments or graduate schools that are in line with the general activities.
3. Starting a mentor system.

### Explanation of the activities

Since we already in spring 2000 applied for money for this project, there was a great enthusiasm, which led to some test activities with low budget during 2000. The themes that we were running in the "test project" were "The PhD-education as a process" and "The perspective of gender on PhD-education". These themes were very popular and we intend to run the Gender theme in a more specific way as one of the type 2 activities.

#### *Type 1 and 2 activities*

Themes that are discussed for the type 1 activities are:

- Ethics in supervision and in PhD-education as general
- What is really supervision? What is quality in supervision? How much supervision is optimal? (Different types of supervision?)
- Supervision of PhD-students in industry - is it different from supervision of PhD-students at the university?
- The graduate school as a resource for supervision (groups of supervisors instead of "lonely wolves")
- The PhD-student as a resource for research and all other activities at the School of Chemical Engineering. (How do we use the possibilities that are?)
- The foreign PhD-students as a resource - how do we handle ethnic and cultural aspects on supervision? We have found promising ways of organising the general meetings.

A general program for a day can look like this:

- The starting point is a lecture by an external "expert". Questions and short discussions during the lecture are allowed. (External experts can be found at other Swedish universities and they are often interested to participate as it gives themselves new thoughts concerning supervision) The lecture is ended by a few relevant, and a bit provocative, questions concerning the theme.
- Small groups with a total mix of supervisors and PhD-students discuss the questions. (It is important that no PhD-student is in the same group as his/her supervisor.) A suitable size of a group is 7-10 persons.
- The groups make short oral reports, which are commented by the expert. Discussion with the audience.
- A deeper lecture by the expert (or a second expert) followed by new questions.

- Discussion in the same groups (works very well - everybody is now familiar with the others in the group)
- Oral reports and discussions.
- End of day by a concluding part, either a short conclusion by the expert or a panel debate. Everybody is also encouraged to give ideas to questions for the coming meetings.

Of course there are also coffee breaks, lunch and dinner on the programme. This makes further discussions possible. We have found out that it is important to localise the meetings outside campus, to get maximum focus on the topic.

The mixture of supervisors, PhD-students, men and women is important. So is the time for discussions in small groups. It is in the little group that the thinking in new directions is born. Everything is documented by a secretary and after every activity there will be a written summary that is distributed to all supervisors and PhD-students.

### *Type 3 activities*

We are going to create a system, which makes it possible for young, new, supervisors to get a mentor. Our aim is that the mentors shall get some special education, but we are looking for ways to do this within the budgets.

## Organisation of the project

### Project leader:

Professor Ann-Sofie Sandberg, Vice-dean with overall responsibility for the graduate education, Department of Food Science

### Assistant project leader:

PhD Per-Eric Thörnström, Director of administration, administrative officer for graduate education, Department of administration

### The project team:

"Committee for Research and PhD-education" The committee consists of the directors of the four graduate schools at the School of Chemical Engineering, one assisting professor and two PhD students. The Vice-dean and the Director of administration are of course also part of this committee.

### Reference groups:

The Doctoral Council (all PhD students at the School of Chemical Engineering), and the Faculty at the School of Chemical Engineering

The project team will work continuously with the organisation of the project and the activities. By choosing a committee that already exists as project team, we know that the participators are both very informed about the problems and are very interested in making progress. We think we can maximise the output from the activities because of the broad knowledge of how things work within the graduate schools. By not fixing the themes for the general activities from the beginning we try to engage all supervisors and all PhD students to propose questions and important issues to discuss. Engagement is important in this process.

## Long-term effects

After this project has finished, both supervisors and PhD students will have a greater knowledge about the research education as a process. Thus the supervisors will have better tools to handle the expectations from the new PhD-students. Within the PhD-students group there will be a better knowledge of what is expected of the student and what he or she can expect from the supervisor.

The School of Chemical Engineering will get a mentor system started, which we can continue to build strong and thereby increase the confidence of the supervisors.

The effects of the general activities may seem to be short-term because of the "turnover-rate" of the PhD-students, unless we don't continue with activities every half-year. However our experience tells us that both knowledge and traditions seems to circulate within the group of PhD students and within the graduate schools for quite long time. By building a competence and creating a more open-minded atmosphere this can be kept up to date with relatively little continuous support. Half a day every second or third semester will probably be enough to take care of what the project has built up. This can be handled within our normal budget.

Since a number of years the School of Chemical Engineering run an introductory course for new PhD-students. This course will be one of our possibilities both to spread knowledge about the project and to spread the knowledge that comes through the project.

We are convinced that this project will be very positive in a long-term perspective both for the supervision specifically, but also for the PhD education as a whole.

# Developing Graduate Supervisor Training

## SUPERVISION IN FOCUS

**Case study for institution  
project 019**

**Chalmers University of Technology,  
School of Chemical and Biological  
Engineering (CTH)**

<i>Budget:</i>	Council funding:	300,000 SEK
	Other:	300,000 SEK
<i>Staffing:</i>		
<i>Audience:</i>	This project was directed toward both supervisors and their graduate students. The basic idea was to improve the graduate supervisors' ability to guide graduate students toward their degrees by examining different issues together with graduate students under professional guidance (experts). This makee both parties aware of the differences in their expectations, modes of thinking, etc. Since both parties share a common goal, both are expected to be motivated to improve graduate supervision.	

### **Project Overview:**

Supervisors and graduate students often have different expectations around graduate education. We have identified this as one of the main sources of difficulty/conflict in graduate supervision. A series of workshops was initiated to address relevant issues in the area of supervision. We hope this attempt to open up the minds of both the supervisors and the graduate students will enable everyone to see problems from different points of view and to discuss freely. All activities were made equally accessible for both supervisors and graduate students.

### **Goals**

The intent of this practice is to focus on the common interest of both supervisors and graduate students that doctoral studies are completed on schedule and that the graduate thesis is of high quality. This means that everybody is actually interested in supervision that works well. Why then is supervision such a problem area? We believe that it is often a matter of lack of communication between the student and the supervisor. The overall aim of this project was to create a milieu that supports the development of a better supervision and thereby a more fruitful PhD education as a total. One main aim is that everybody shall become aware of the reasons for differences in approach and discuss them in an open-minded atmosphere.

### **Objectives**

As a result of this practice the participants should be able to handle the different aspects of graduate supervision more professionally. They will be more open-minded and willing to discuss with their graduate students and, therefore, have a better chance to improve continuously as supervisors. Hopefully the participants' perspective on supervision will have been broadened.

## **Format/Length**

The basic idea is to arrange workshops, i.e. general activities, that are open for PhD-students and supervisors that illuminate different approaches on supervision.

A typical workshop is a full working day with a program that includes a mix of deeper lectures, engaging or even provoking questions followed by discussions in small groups and short oral reports, which are commented on by the expert. New lectures and further discussions can follow this. It all ends with a summary of what has been the "insight of the day."

Topics that have been covered by the projects are "Gender Perspectives on Supervision", "Ethics in Supervision", "Quality in Supervision and Graduate Studies", and "Supervision of Graduate Students in Industry". Prior to the start of the project we tested the concept and ran workshops covering the main issues "The Development Process During Graduate Education", "Teambuilding and Coaching" and "How To Create a Positive Milieu for Supervision". The experiences of experienced supervisors were presented for discussion.

## **Partners:**

*Internal:* The staff at the central administration of graduate education at Chalmers was invited as well as the vice president responsible for graduate education at Chalmers.

*External:* Depending on the issue, we have invited different experts and collaborated with them regarding the program for the workshop. They have given us valuable expert input to the issues covered.

*Faculty:*

## **What makes this program effective?**

*Program:* The University decided to permanently implement Phase 1 of the supervisor training programme.

*Participants:* All supervisors, as well as all graduate students were invited to the workshops.

## **Assessment:**

*Measures used:* The only assessment that has been done so far is oral. This means that the project group has used their contacts to hear what people have thought of the project. Most reactions are very positive. The "quality" workshop helped a great deal when we made our self-evaluation for the evaluation of the graduate studies in Chemistry made by the council of higher education in 2002-2003.

*Results/Impact:* The project group, that is the committee for research and graduate studies, has continuously discussed the project and the members have actively listened to new ideas and to criticism of details in programs etc. This has been taken into account when planning for the next workshop.

*Next Steps in Assessment:* In March we will have our next workshop and we have over 50 persons (about 50% supervisors and 50% graduate students) that have signed up for it over a month in advance.

### **Lessons learned:**

Be careful to choose themes that are of general interest or that are of some actuality. The Quality theme was discussed close to a quality assessment of the PhD-education in Chemistry and was therefore of great interest. We are now planning, for a workshop concerning stress-related health problems. It will be run in close collaboration with the occupational health of Chalmers, Kvalita.

It is important what external experts you choose. You have to discuss not only the topic of the workshop, but also how to use the format to get as much as possible out of the discussions and the presentations.

Try to involve the graduate students as much as possible in the planning process. Many of them are really keen on doing a good job and it also seems to have the effect that the graduate students in general become motivated to attend the workshops.

In all discussion in-groups - don't form too small groups. 6-10 persons are normally good. Be careful to mix men and women and never put a graduate student in the same group as his or her supervisor. This improves discussions and everybody feels more comfortable. It seems wise to let the graduate students to present the results of the discussions - they do it very well.

### **The future**

The effect of the practice has been very positive, but it may seem to be short-term because of the "turnover-rate" of the PhD-students. Our experience, however, tells us that both knowledge and tradition continue to circulate within the group of graduate students and within the graduate schools for quite long time. Half a day or a whole day every second or third semester will from now on be held. We believe this will be enough to take care of and keep the level that the project has built up. This can be handled within our normal budget.

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**URL for practice:**

This project is not yet on the web.