

A System for Ensuring the Quality of University Education: Course evaluation, reflection days, alumni evaluation and visiting committees

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Excerpt from the Department of Technology Management and Economics' self-evaluation to the Swedish Board of Higher Education 2005, paragraph 67

How do you ensure that graduates have the knowledge and skills (qualitative goals) expressed in the objectives?

To ensure that graduates have the requisite knowledge and skills, we use a number of linked instruments at different levels and in different time periods.

- Examination
- Course Evaluation
- Reflection Days
- Program Evaluation – internal
 - Students - going program
 - Students - after completion of programs
- Program Evaluation - external
 - Internal initiated:
 - Visiting Committee
 - Alumni
 - employer or supervisor for graduates
 - Externally initiated: Higher Education, etc.

The examination is one of the main instruments for monitoring, provided it is not only focused on testing the short-term memory through a final exam design that contains standard questions alternative multiple choice questions. The ambition has instead been to create a broader and deeper basis for examination by both examining in more dimensions and extended over time. Many courses still have the final exam after a seven week period but the way to ask questions is focused more on understanding and the students' ability to analyze and assess the value of their own answer.

Several courses have also introduced knowledge tests during the course in the form of partial tests. Another options that exist in some courses are interactive examination after half course time that primarily aims to ensure that everyone has followed the learning goals for the first 3 weeks and through this interactivity the students get opportunities to discuss issues that are unclear at an early stage before the exam. Much of teaching is additionally organized as seminars where participation,

either as a group member or individually, form part of the examination. Within the master's programs are also examination in relation to individual study plans, in which with the supervisor in advance agreed personal learning goals can be taken into account.

Course evaluation is carried out during grades 1-3 in a standardized way in which a follow-up is directly related to the learning objectives formulated for each course and where comments and suggestions for improvements are documented. This evaluation is done by a group of 5 students in each course. In Master's programs, each course is evaluated but the procedure for this is not standardized, and different Master programs have chosen to make this assessment in different ways. One reason for this is that the ambition has been to make each course evaluation in relation to the program's objectives as a whole. For example, two programs have chosen to have regular meetings (every 14 days) with student representatives for continuous correction, others have chosen to use a combination of course questionnaire and substantial time scheduled for concluding reflection with the participation of all course participants. In one of the master programs this is combined with diary writing that provides continuous monitoring of individuals' learning and frustrations, which is then discussed at follow-up meetings with the supervisor.

Reflection Days were initiated as the department wanted to practice what we preach, i.e. working in accordance with a learning cycle approach. Traditionally, Chalmers has worked in accordance with a 7-week lecture / study period followed by one week full of exams. Many students have had as habit of placing a large portion of the work load to the 7th week to study for the exam and for the 3 exams in the exam period their short-term memory has been an important asset. After having relaxed during the final weekend, the students were then thrown directly into a new study period with new teachers that come with

Course Descriptions and with new literature - i.e. in a way that is transverse to what we teach. Since four years, we have introduced a reflection day as the first day after an exam period – the original idea was that the students individually and in groups would have plenty of time to reflect on the past seven weeks period's results and process. What worked well for me as an individual, in my team, in class and in relation to Chalmers and for my general situation as a student? What worked less well, i.e. which areas of improvement can I / we find for me as an individual, our group, class, etc.? This reflections day has not been focused on individual courses but is instead focused on the learning process as a whole, where at Chalmers typically 3 courses are processed in parallel and also have impact on the total learning process. This type of reflection ensured that every individual thought about their own learning process, which is the main objective, as we believe that it is the individual student who has the primary responsibility for their own learning process - teachers and administrators can only, together with other students, create the conditions for a adequate learning. In these days of reflection, students in the group identified areas that need to be improved to ensure knowledge and skills, and not the least, the students come up with recommendations to teachers and administrators about what the department and Chalmers level should change to improve the learning process.

Internal program evaluation is a prerequisite for the continuous development and the respective Program Manager is responsible for that this is implemented in accordance with the delegation in force until turn of 2004-2005 (ongoing program works in accordance with this model until new rules are defined). In accordance with this delegation from the then Vice Dean for undergraduate studies each of our programs and program years 1-3 would be evaluated by an external Visiting Committee every two or three years (see below External program evaluation). Each programs also have a final evaluation in connection with the completion of the course component (40 points). Some institutions / departments have also conducted formal assessments of master thesis supervision.

External program evaluation is an important tool to put the training into a broader context and obtain input from users of the graduates' skills - both from I-engineers who use their knowledge in practice, from the people who employ the graduated engineers as well as from Education experts, etc.

In conjunction with the IKON project (a department level education development project), the department introduced a continuous program evaluation methodology where all training programs regularly, every two or three years, shall be evaluated by a "Visiting Committee". The inspiration for this evaluation form comes from MIT in the US. For a long time they have used this system and believe it is the most important instrument for renewal, see "Study trip to the US in 1998: visits to six universities" (Alänge 1998).

In December 2004 the department carried out a "visiting committee" evaluation of entrepreneurial school and ICM-E under the leadership of the Schools's first dean Professor Hans Björnsson, who recently returned after 6 years at Stanford University. The committee includes also the former President for International Jönköping University, Professor Clas Wahlbin and alumni from the Entrepreneurship School. That alumni will be part of the evaluation is extremely important because the objective is to evaluate what knowledge and skill development have contributed in practice. Therefore, the alumni that are included have worked at least 2 years after graduation but not more than five years because they still must have the program relatively up to date. In accordance with the delegation to Master's program manager for the two Venture Creation Programs shall these prepare material for the Visiting Committee containing its own analysis (self-evaluation) and present its own development goals or suggestions for improvement. This evaluation will be reported in the spring of 2005.

Alumni evaluations can also be done in other ways - with the aim to assess whether what has been learned also useful in practice. During the IKON work, we used input from alumni at a numerous occasions and for all Master programs development. In discussions with alumni they stressed the importance of retaining some elements that a student does not always appreciate at the moment of on-going studies, but which can be some of the most important learning opportunities for professional life. For example highlighted alumni, the importance of information where not all the information is complete, where the students are forced making assumptions, where several different "correct" solution alternatives exist, i.e. such as in a traditional course evaluation conducted by students in the middle of an education is perceived as frustrating and therefore resulting in improvement proposals for greater clarity, a red thread and the need for solution templates. Alumni evaluations of education are therefore an extremely important complement to the instruments for evaluation where our students leave valuable suggestions to improvements and comments on what should be retained. After IKON's analytical work to develop new master programs, we find it essential to further develop our procedures for interaction with alumni, and this is on our agenda in 2005. In our opinion it is not enough to only examine the types of jobs and the level of pay that graduates have achieved, which is common in American comparative studies. The main reason for this is that these measurements do not necessarily say anything about the contribution of education to the "sought after competence, "because these dimensions may also be a direct effect of students' input quality. Surveys can provide some understanding of the value of education, but should be combined by other data collection, such as individual interviews or group-based interaction.

We have to complement the evaluations with the help of alumni and we also found it useful talking to people who have been hiring and been supervisors for recent students. For example, the IKON work revealed a viewpoint on our department's education that inhibit the new engineers' ability to function in their new jobs - the one of us cherished "the case method", in which our students were drilled from year 1 to 4.5 but which resulted in a very high production efficiency internally during training, but also

in that "new graduate engineers believe that all humans work the same way and we must therefore spend one year at unlearning to get them to work in a good way in the workplace. " This point of view, was considered in the new master's programs with a mix of students from all over the world with different backgrounds, skills, work approaches, which create opportunity for our Swedish students to learn to function in multicultural teams. From having worked by the motto that only creates effective homogeneous groups learning in Swedish with Swedish students, we are now working with the basic idea that the students instead need to develop a very high ability to multi-cultural groups to work together and create learning processes involving all group members. However, this is not an easy task and with six months' experience of the new masters programs we have allocated funds to the spring of 2005 to conduct a careful analysis, together with teachers and student representatives, of the experience of the different master's programs that have chosen a slightly different approach.

External evaluations are initiated at regular intervals outside both our department and Chalmers. These can provide valuable input for improvement. However, we wish to emphasize that it is essential to distinguish self-assessments designed to pick up all the strengths and weaknesses in order to find the most essential improvement areas for an organization - from comparative analyzes of different organizations. The ongoing evaluation initiated by the Swedish Board of Higher Education, in which this self-analysis is a contribution, would be placed in both categories, thus it can be less useful as an improvement tool. In our opinion, it would be advantageous to create a sequence where the self-assessment provides a starting point for the improvement process sited in a time when it fits into an organization's development cycle (i.e. it can be good with central requirement that a self-assessment shall be carried out in a given period, combined with follow-up that it really takes place) - but that any comparisons with other organizations or against a standard / target is sited in a later time (about 2 years) as organizations should have been able to implement identified improvements.

References

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