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Quality assessment survey at the School of Civil Engineering at Aalborg University

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Abstract

As part of an improved quality assessment procedure at the School of Civil Engineering at Aalborg University, an online survey has been undertaken among all students. Due to external requirements and a wish for more structured feedback, an online questionnaire was presented to all students under the study board of civil engineering.

The questionnaire was jointly developed for all study boards at Aalborg University. The questionnaire forms an investigation of students' satisfaction and evaluation of the overall structure of the education including self-reported performance assessment. The paper discusses the structure of the questionnaire and presents the results. Finally, suggestions for improvements regarding the questionnaire and further quality assessment are included.

The response rate was 40%. Overall, the results showed a general satisfaction with the studies although substantial variance was observed. Approximately half of the students prepare in connection with courses and lectures. Furthermore, it was found that a significant proportion of students are studying only part of the curriculum – typically less than 70% of the curriculum - and very few are studying the entire curriculum. A number of discrepancies between expected and experienced conditions related to good teaching are identified and discussed.

Keywords: Quality assessment, questionnaire, civil engineering, performance assessment, students' satisfaction

1. INTRODUCTION

Aalborg University has a problem-based and project-oriented approach to teaching. The typical semester is divided in project work and courses (approximately 50%-50%). The courses are organized in so-called Project Unit (PU) and Study Unit (SU) courses. The PU courses support the project and they are examined (indirectly) through the project-examination. The SU courses are "standalone" courses related to the entire education (like math, physics and other basic topics) and assessed by individual examination.

Previously, the quality assessment procedure in connection with a semester was initiated in the semester planning phase where the coordinator considers relevant comments from the evaluation of previous year's semester.

At semester start the students at the school form groups, typically of 5 – 7 students. Each group contributes with one member to a student-staff steering group chaired by the semester coordinator. The steering group may also comprise the teachers at the specific semester; however, this is on a voluntary basis.

The steering group has frequent meetings on ad hoc basis, typically one meeting each month. At the meetings discussions may typically comprise practical details regarding the physical framework, students' achievements in relation to semester targets, interpretation of project theme, teaching in general, and planning of excursions. The students of the steering group take the minutes. The minutes are sent to all students and teachers at the semester as well as the study director.

For each course a midterm evaluation must be organised by the teacher. The midterm evaluation is undertaken immediately after a lecture with mutual exchange of comments and advice. The study board supplies a list of

guiding questions to facilitate the process, otherwise, the process is rather unstructured and may be shaped to suit the individual teacher's preferences. No formal feedback from this evaluation is required.

After the semester a final evaluation is produced by the students within each steering group (based on input from the student members' project groups). The coordinator makes sure that the evaluation is accomplished and acts as a moderator. The final evaluation is sent to all students and teachers at the semester and to the study board.

The study board collects the final evaluations and they are discussed at the next board meeting. If there are critical issues the director contacts the teacher and in a few cases also the teacher's head of department. General comments may lead to overall adjustments and change of procedures.

Today, the quality assessment of the school is modified due to external requirements and a wish for more structured feedback. New governmental requirements demand that structured quality assessment surveys are undertaken and that the corresponding results are published online. This fact initiated the process at Aalborg University to develop a common questionnaire for the entire university. This questionnaire is presented in this paper together with the first results from the School of Civil Engineering.

Introduction of the questionnaire has changed the quality assessment procedure slightly. The result of the questionnaire (in general and on semester basis) is now sent to the students before the final evaluation. In that way general and semester-specific points of view can be discussed together with other relevant issues. Thus, the questionnaire is applied as a supplement to existing activities to improve quality. Further modifications based on the experiences are planned which will be discussed briefly in chapter 4.4.

In the following the structure of the questionnaire as well as the overall procedure of the survey are explained. After that the results are outlined and discussed.

2. METHOD

The questionnaire is jointly developed for all study boards at Aalborg University to ensure fulfilment of governmental requirements, a consistent level of general quality assessment across the university, and to enable comparison among the various study boards. The questionnaire is compulsory.

During the development phase several versions of the questionnaire have been discussed and especially the length is debated, i.e. the amount of information gained versus the possibly low response rate. Completion of the final version of the questionnaire is estimated to take approximately 20 minutes.

The questionnaire forms an investigation of students' satisfaction and evaluation of the overall structure of the education including self-reported performance assessment. It comprises the following topics: targets for learning outcome, study activities and performance, learning outcome of study activities, project work, courses/lectures/seminars, the semester in general as well as planning, information, and physical framework like class rooms and IT facilities (a total of 90 questions). An overview is presented in table 1 and a more complete version in the appendix (table 2).

The questionnaire does not consider evaluation of specific courses and teachers' performance. This is done separately by each board either by supplementing the present questionnaire by additional questions or by other means. At the School of Civil Engineering the above mentioned procedure was followed.

The questionnaire is presented to the students as an online survey by means of an e-mail with an introduction and a link. The questionnaire is available in Danish as well as English. To stimulate the interest three book tokens are drawn among the respondents on 1,000 DKK and 2 x 500 DKK, respectively. Apart from that the students are encouraged to respond to influence their own education.

A total of approximately 240 students at the School of Civil Engineering receive the questionnaire September 2007. After deadline a reminder is sent to the remaining students. The study director may trace the respondents; however, all results are kept anonymous when presented.

Afterwards the results are analysed and discussed in detail at the study board. Furthermore, the results are made available on the internet to fulfil the governmental requirements, however, in a way that secures anonymity for students and teachers.

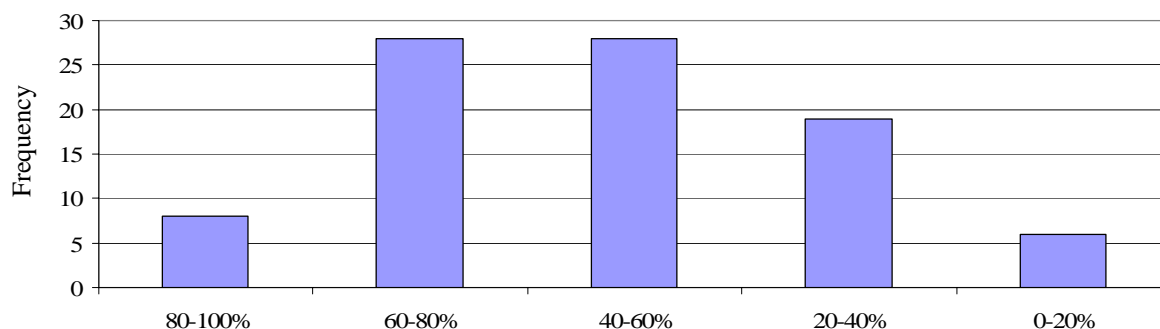
INTRODUCTORY INFORMATION
TARGETS FOR LEARNING OUTCOME
STUDY ACTIVITIES AND PERFORMANCE
<ul style="list-style-type: none"> ○ Efforts in study activities ○ Internship ○ Performance in the semester in general
LEARNING OUTCOME OF STUDY ACTIVITIES
<ul style="list-style-type: none"> ○ Evaluation of learning outcome ○ Total evaluation of study activities in relation to targets
PROJECT WORK
<ul style="list-style-type: none"> ○ Group cooperation ○ Solo work ○ External partners ○ Supervisor ○ Project work in general ○ Problem-based learning (PBL)
COURSES/LECTURES/SEMINARS
<ul style="list-style-type: none"> ○ Syllabus ○ Student involvement ○ Expectations of and experience of courses/lectures/seminars ○ Project Unit (PU) and Study Unit (SU) courses ○ About courses/lectures/seminars in general
THE SEMESTER IN GENERAL
<ul style="list-style-type: none"> ○ Total outcome and study environment
PLANNING, INFORMATION, AND FRAMEWORK
<ul style="list-style-type: none"> ○ Planning ○ Information ○ Framework

TABLE 1. Questionnaire headlines (detailed content is found in the appendix, table 2).

3. RESULTS

The overall response rate is 40% (21% female and 79% male students); however, for some questions the response rate is somewhat lower. The results are presented in terms of mean value and standard deviation for each question in the appendix (table 3). They are discussed in chapter 4. For most topics comments may be stated in the questionnaire which are, however, omitted here to save space.

To supplement the data on central tendency and spread in table 3 several figures are included to show the detailed distribution of data. This is done for a number of interesting results related to preparation, part of syllabus studied, and comparison of expectations and experiences for three topics, see figures 1 - 3.



Effort level (preparation in connection with courses/lectures/seminars)

FIGURE 1. Response to the question “How would you evaluate your effort in the study activities during the semester?” related to “Preparation in connection to courses/lectures/seminars”. 100%: maximum effort (= apparently there was no more you could have done, studied, questioned, etc.); 0%: minimum effort (= barely any investment in terms of time or effort in the activity).

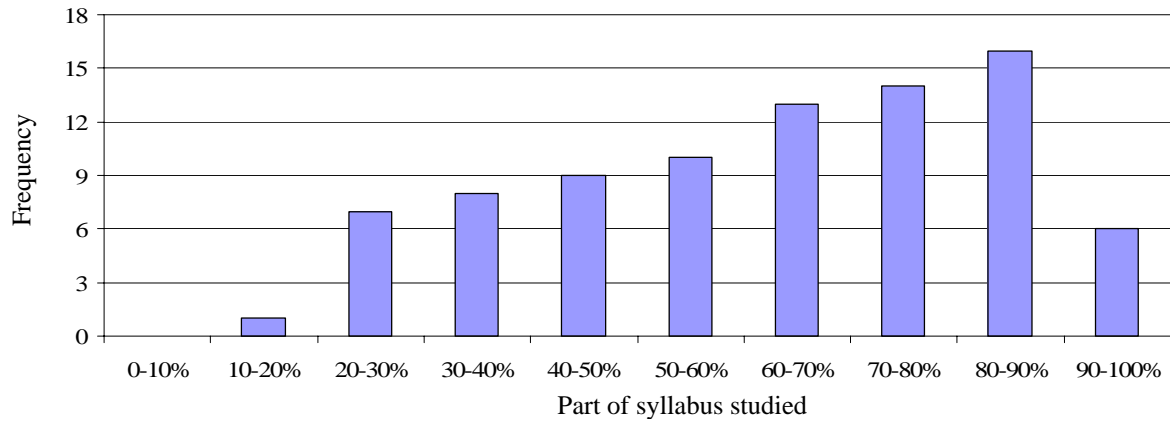


FIGURE 2. Response to the question “How much of the syllabus for each course/lecture/seminar of the semester did you study?”.

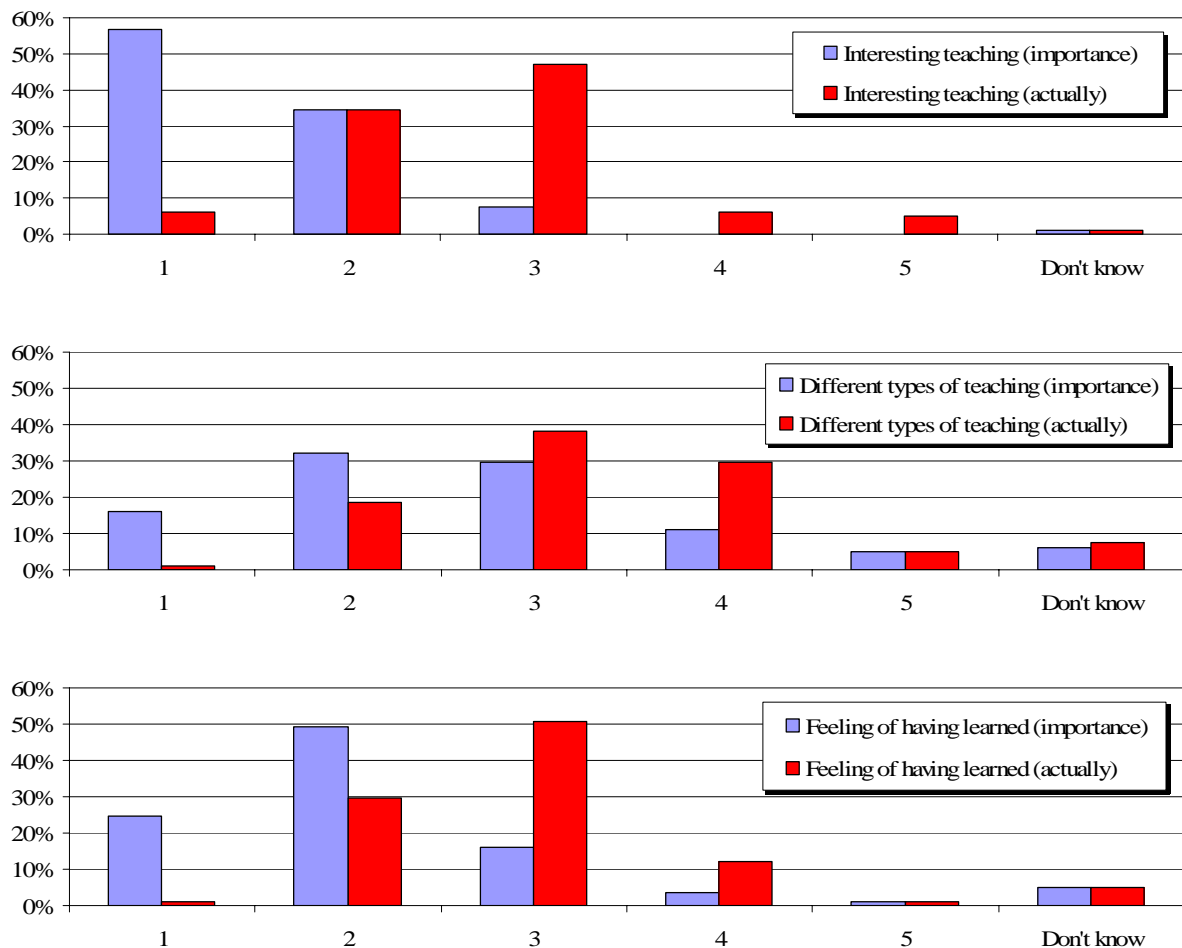


FIGURE 3. Comparison of expectations and experiences for three different topics where substantial differences are found. Response to the two questions “Importance for good teaching” (= importance) and “To what extent was it the case this semester?” (= actually) for the three topics. *Top*: “The teaching is interesting and gets my attention”, *Centre*: “The lecturers use different types of teaching”, *Bottom*: “Most often I leave the classes with a feeling of having learned something”. The scale regarding “importance” is ranging from 1 “Very important” to 5 “Not important”. The scale regarding “actually” is ranging from 1 “To a very high degree” to 5 “Very low degree”. The number of respondents is 81 in all six cases.

4. DISCUSSION

Initially, the questionnaire itself is discussed after which the respondents' answers are considered together with comments on bias and other issues related to the validity of the survey. Finally, suggestions for improvements and further development of the quality assessment procedure at the School of Civil Engineering are briefly discussed.

4.1 The questionnaire

The questionnaire has the quality of including most relevant overall topics related to learning processes and outcome as well as students' satisfaction, however, at the expense of its length. In effect this may reduce the response rate or at least the rate of completed questionnaires (85% in the present case) and the number of comments supplied along with the answers in the check lists. Furthermore, the questions are not related to specific courses and teachers and as such it must be supplemented in some way to enable specific adjustments at the school. Some research, however, supports that the length is not necessarily that critical [1].

As mentioned previously the questionnaire must be used by all study boards at the university. This obviously facilitates comparison and internal benchmarking. Apart from that a common questionnaire saves time and resources for the local study boards that may not necessarily be qualified to develop a proper questionnaire on their own. The disadvantages are obviously the omission of school-specific questions and some list of activities that include irrelevant topics. It is allowed to supplement the questionnaire as long as the "original" questions are maintained which may to some extent solve the problem. Due to the length of the survey this possibility is not utilised in the present survey.

4.2 Results from the survey

In general it is found that the students are reasonably satisfied with the learning process and outcome although substantial variance is observed. The scales in the questionnaire range from 1 to 5, 1 being the "best". The typical sample mean is located slightly above 2. Only three sample mean values are equal to or above 3 (i.e. 3.2 for the question of teachers using different types of teaching, 3.2 for students' own involvement in planning and development, and 3.0 for learning outcome related to preparation).

The targets for learning outcome seem to be fairly well communicated to the students either directly or by their own studies of the targets leading to a good overall understanding.

If students' effort and performance are considered it is clear that most time is devoted to project work (and internship when applicable). This is not surprising due to the clear project-orientated focus at Aalborg University.

One somewhat surprising result is the low rate of preparation in connection with courses/lectures/seminars. Here the sample mean is 53% (100% being maximum effort), see figure 1. While few students are really "well prepared" almost all students are prepared to some extent. Apart from an indication of effort level, this is obviously also a question of learning style. Many students may prefer to study the syllabus in detail after the lectures. Another explanation could be heavy work load and as such a question of priorities. An average of 42 working hours weekly is reported with significant spread among the students (sample standard deviation 9 hours). For a fulltime student each semester comprises 30 ECTS of each 30 hours expected work. In practise each semester has duration of 20 weeks leading to an expected effort of 45 hours per week. Thus, the self reported work load is close to – in fact slightly below - the expected workload.

When the learning outcome of the various study activities is examined it is clear that project work is perceived as the most beneficial whereas preparation in connection with courses/lectures/seminars is rated significantly lower. The connection with the abovementioned study effort seems to be clear even though the causal relation is unclear, i.e. low level of effort leading to mediocre outcome versus mediocre learning outcome leading to reduced effort to optimise the overall use of students' time resources.

As to project work most students report to contribute constructively to the cooperation in the group, see table 3. They find the cooperation with supervisors well functioning. However, cooperation between the supervisors is reported less positively. In the supervision it is evident that the support is more adequate in relation to the academic content than to the work process. Answers reveal that PBL is perceived as conducive to the development of academic competencies (sample mean 1.9) but slightly lower regarding the ability to define and formulate problems (sample mean 2.4). One explanation may be that the required syllabus set some practical limits for the time allowed to define and formulate problems especially at lower semesters.

Regarding courses/lectures/seminars some quite interesting tendencies are found. One of the most surprising findings is how much of the syllabus is studied. It is reported that (only) 63% on average is studied. The corresponding distribution is shown in figure 2. 30% of the students report to have studied less than 50% of the syllabus and less than 10% of the students report to have studied “everything”. This finding may indicate that substantial parts of the syllabus are – if not directly superfluous – not absolutely necessary. Another point might be that project work is a valuable learning substitution compared with “classic” textbook studies.

In terms of influencing the study it is evident that the possibilities are clearly better than the request from students to actually use this influence.

If expectations and experiences of courses/lectures/seminars are compared both correspondence and discrepancies are found. Three topics are selected for further comments as shown in figure 3, namely “The teaching is interesting and gets my attention”, “The lecturers use different types of teaching”, and “Most often I leave the classes with a feeling of having learned something”. As to interesting teaching the expectations, i.e. importance for good teaching, are quite strong whereas the experience, i.e. to what extent it is actually the case, is less pronounced. The same applies for different types of teaching. Finally, somewhat mixed response is found regarding the feeling of having learned something. Even though the discrepancy between expectations and experience is to some extent expected it surely leaves room for improvement. In fact it could be the case that different types of teaching may facilitate interesting teaching that attracts attention and provides the feeling of having learned something [2, 3].

Discrepancies are not only related to teachers’ performance. The students find their own preparation to be more important for good teaching than the level of preparation actually accomplished.

Some comments on planning and physical framework indicate that for instance information on semester activities and IT-facilities could be improved. In fact wireless network is installed all over the campus since the survey.

4.3 Validity of the survey

A critical view on the results of the survey is suitable before making any adjustments.

The response rate of 40% is assumed to be satisfactory and representative even though the majority of students have not provided an answer. The fraction of males and females corresponds reasonably well with the total population of students at the school, whereas the fraction of international students is lower in the survey. Bias may obviously exist to some extent in the response group compared with the entire population. For instance, the response group may be more dissatisfied than the average student using the opportunity to air its opinion. On the contrary disillusioned students may find the survey useless and be reluctant to participate because they don’t believe changes and improvements will happen.

Due to the fact that the questionnaire is used by all study boards at the university the questions are somewhat general, however, possibilities for comments are offered for most topics and they are frequently used. Thus, statements marked by a cross only in the check list can be amplified by specific comments which may also be helpful when changes are to be implemented.

Another crucial issue is the validity of self-evaluation. In many cases the students have to evaluate their own performance and effort. This is by nature subjective and prone to some bias. Students may overestimate and underestimate. For instance, to what extent does the question on “feeling of having learned something” relate to actual deep learning?

As the questionnaire is the first common questionnaire presented to the students at the School of Civil Engineering it is not possible to compare with previous semesters to determine a tendency. However, benchmarking is possible to some extent via comparison with other schools at the university; especially other engineering schools could be relevant and interesting for further investigation.

4.4 Future improvement of quality assessment procedure

The quality assessment survey has led to increased focus on the overall state of things. It has resulted in fruitful discussions at the study board and resulted in a number of adjustments and – perhaps equally important – an awareness of issues that may be improved in the future as time and resources allow.

The quality assessment procedure has been changed slightly (results from the questionnaire applied as basis for “local” discussions at student-staff steering groups) and further improvements are expected. For instance, the questionnaire for the next semester will be expanded to include also course specific questions. This may influence the response rate but at the same time improve the usefulness of the information.

5. CONCLUSIONS

As part of an improved quality assessment procedure at the School of Civil Engineering at Aalborg University, an online survey has been undertaken among all students. Previously, quality assessment was made partly by relatively unstructured feedback from student-staff steering groups and partly by general discussions at the study board among staff and student members.

Due to external requirements and a wish for more structured feedback, an online questionnaire was presented to all students under the study board of civil engineering.

A total of approximately 240 students received the questionnaire. The response rate was 40% (21% female and 79% male students). Overall, the results showed a general satisfaction with the studies although substantial variance was observed. Approximately half of the students prepare in connection with courses and lectures. Furthermore, it was found that a significant proportion of students are studying only part of the curriculum – typically less than 70% of the curriculum - and very few are studying the entire curriculum. A number of discrepancies between expected and experienced conditions related to good teaching are identified and discussed.

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- [1] I. Arbnor, B. Bjerke, “Methodology for Creating Business Knowledge”, 2nd edition, SAGE publications, London, 1997.
- [2] J. Biggs, “Teaching for Quality Learning at University”, 2nd edition, Open University Press, McGraw-Hill, UK, 2003.
- [3] B. S. Bloom *et al.*, “Taxanomi of Educational Objectives. The Classification of Educational Goals.” Handbook 1: Cognitive Domain. New York: David McKay Company, Inc. (7th edition, 1972), 1956.

APPENDIX

INTRODUCTORY INFORMATION
<ul style="list-style-type: none"> • Gender • Age • Nationality
TARGETS FOR LEARNING OUTCOME
<ul style="list-style-type: none"> • At the semester start the study programme clearly informed the students about the targets for the semester • I studied the targets for the semester • In my opinion I understood these targets
STUDY ACTIVITIES AND PERFORMANCE
Efforts in study activities
<ul style="list-style-type: none"> • How would you evaluate your efforts in the study activities during the semester? <ul style="list-style-type: none"> - Courses, lectures, seminars - Project work, including project work involving work experience - Internship in or outside Denmark, possibly completed with a project report - Practical exercises/training (broadly defined), for example - lab exercises - land surveying - clinic sessions - interplay - company visits - workshops - case studies

<ul style="list-style-type: none"> - solo teaching (1 student at a time) - Portfolios - Net-based teaching activities - Reading groups/study groups - Preparation in connection with courses/lectures/seminars - Other activities
Internship
<ul style="list-style-type: none"> • Where did the internship take place?
Performance in the semester in general
<ul style="list-style-type: none"> • How many hours weekly did you on average spend on your studies this semester? • I estimate that my total work efforts during the semester were satisfactory in relation to the study programme's expectations of me • My total work efforts during the semester lived up to my own expectations
LEARNING OUTCOME OF STUDY ACTIVITIES
Evaluation of learning outcome
<ul style="list-style-type: none"> • How do you evaluate your learning outcome of the different study activities (for instance in terms of knowledge, practical skills, new/strengthened competences etc.)? <ul style="list-style-type: none"> - Courses/ lectures/ seminars - Project work, including project work with studies involving work experience - Internships in or outside Denmark, possibly completed with a project report - Practical exercises/training (broadly defined), for instance <ul style="list-style-type: none"> - lab exercises - land surveying - clinic sessions - interplay - company visits - workshops - case studies - solo teaching (1 student at a time) - Portfolios - Net-based teaching activities - Reading groups/study groups - Preparation in connection with courses/lectures/seminars - Other Activities
Total evaluation of study activities in relation to targets
<ul style="list-style-type: none"> • The study activities gave me altogether a strong basis for achieving the study programme's targets for the semester.
PROJECT WORK
<ul style="list-style-type: none"> • Type of project? <ul style="list-style-type: none"> - The final bachelor project - Master's thesis - Other project • I prepared the project together with other students
Group cooperation
<ul style="list-style-type: none"> • I think that the group formation process proceeded appropriately • In my opinion, the cooperation of the group was good • I think that I contributed constructively to the cooperation in the group
Solo work
<ul style="list-style-type: none"> • Why did you work on your own?
External partners
<ul style="list-style-type: none"> • Was the project prepared in cooperation with an external partner? (The question includes both projects 'ordered' from outside and cooperation on your/your group's initiative) • My learning outcome (for instance knowledge, skills, competences) of the cooperation with the external partner was great
Supervisor
<ul style="list-style-type: none"> • Did you have more than one supervisor? • The cooperation with the (main)supervisor functioned well (agreement about "the rules of the game", matching of expectations, etc.)

<ul style="list-style-type: none"> • The cooperation with the other supervisors functioned well (agreement about "the rules of the game", matching of expectations, etc.) • How was the cooperation between the supervisors? • There was adequate support in the supervision in relation to... <ul style="list-style-type: none"> - the project methods - the academic content - the work process
Project work in general
<ul style="list-style-type: none"> • The possibilities and limits for choice of project subject were made clear • We/I managed to carry out a project of high academic quality
Problem-based learning (PBL)
<ul style="list-style-type: none"> • In the semester I experienced the problem-based and project-oriented approach to teaching as conducive to the development of... <ul style="list-style-type: none"> - my academic competences - my ability to define and formulate problems - my ability to analyze and deal with problems - my ability to plan a long work process and reach the goal in time
COURSES/LECTURES/SEMINARS
Syllabus
<ul style="list-style-type: none"> • How much of the syllabus for each course/lecture/seminar of the semester did you study?
Student involvement
<ul style="list-style-type: none"> • In general the lecturers show responsiveness to the students' attitudes and wishes in connection with the planning and development of the programme • I make use of the opportunity – when it occurs – to exert influence on the planning and development of the programme
Expectations of and experience of courses/lectures/seminars
<ul style="list-style-type: none"> • how important do you think that this condition is for good teaching (at the level you are studying) • in your opinion, to what extent was this actually the case in the teaching during the semester. <ul style="list-style-type: none"> - The teaching covers the syllabus - The teaching gives perspectives beyond the syllabus - The teaching is interesting and gets my attention - The lecturers are open to questions or viewpoints from the students - The lecturers indicate what has to be studied before each teaching session - We students are well prepared - The lecturers use different types of teaching - Most often I leave the classes with a feeling of having learned something
Project Unit (PU) and Study Unit (SU) courses
<ul style="list-style-type: none"> • How would you evaluate your efforts in the project unit courses (PU) and study unit courses (SU) of the semester?
About courses/lectures/seminars in general
<ul style="list-style-type: none"> • Is there anything which you would in particular emphasize concerning courses/lectures/seminars suggestions for further development of these?
THE SEMESTER IN GENERAL
Total outcome and study environment
<ul style="list-style-type: none"> • The most important competences that I have acquired or strengthened during the semester were... • I regard the semester as essential for my educational profile • The semester required a big work effort on my part • The semester was in general an academic challenge • The academic study environment among the students affected my learning outcome positively • The group functioned socially well in the study environment
PLANNING, INFORMATION, AND FRAMEWORK
Planning
<ul style="list-style-type: none"> • From semester start, I felt well informed about semester activities, including syllabi • The planning of the semester activities was satisfactory (e.g. placing and length of the study activities) • The extent of study activities initiated by the study programme was adequate • The examination plans were announced to the students in sufficiently good time

Information
<ul style="list-style-type: none"> • Throughout the semester I felt well informed about... <ul style="list-style-type: none"> - practical conditions (cancellations, classroom changes, books that I had to buy, enrolment deadlines, etc.) - extraordinary events relevant for study work (for instance relevant guest lectures, inaugural lectures, PhD-defenses, debate meetings). - political conditions including the study board's work (student representatives, meeting times, agendas, etc.) - social activities in connection with the university (Friday bar, student parties etc.)
Framework
<ul style="list-style-type: none"> • The physical framework for teaching was good (classrooms, computers, AV-equipment, laboratories, etc.) • IT-facilities and services were good (for instance intranet/electronic conferences/newsgroups, home access to relevant materials and homepages, etc.) • IT were used appropriately on the part of the university, i.e. by lecturers, secretaries, IT staff, etc.

TABLE 2. Questionnaire applied in quality assessment. Introductory text, scales, possibilities of comments and other minor details are left out in the overview to save space.

INTRODUCTORY INFORMATION (Sample size 95 students, Population size approx. 240, Response rate 40%)
<ul style="list-style-type: none"> • Gender (21% female; 79% male) • Age (Sample mean 23.8 years, Sample standard deviation 1.9 years) • Nationality (93 Danish; 2 other EU countries)
TARGETS FOR LEARNING OUTCOME ¹
<ul style="list-style-type: none"> • At the semester start the study programme clearly informed the students about the targets for the semester 2.5 (1.0) • I studied the targets for the semester 2.4 (0.8) • In my opinion I understood these targets 2.3 (0.8)
STUDY ACTIVITIES AND PERFORMANCE
Efforts in study activities ²
<ul style="list-style-type: none"> • How would you evaluate your efforts in the study activities during the semester? <ul style="list-style-type: none"> - Courses, lectures, seminars 75% (14%) [90 resp.] - Project work, including project work involving work experience 82% (12%) [88 resp.] - Internship in or outside Denmark, possibly completed with a project report 80% (14%) [2 resp.] - Practical exercises/training (broadly defined), for example 74% (14%) [58 resp.] - Reading groups/study groups 72% (20%) [44 resp.] - Preparation in connection with courses/lectures/seminars 53% (21%) [89 resp.] - Other activities 50% (20%) [7 resp.]
Performance in the semester in general ¹
<ul style="list-style-type: none"> • How many hours weekly did you on average spend on your studies this semester?³ 42 hours (9 hours) • I estimate that my total work efforts during the semester were satisfactory in relation to the study programme's expectations of me 1.8 (0.7) • My total work efforts during the semester lived up to my own expectations 1.9 (0.8)
LEARNING OUTCOME OF STUDY ACTIVITIES
Evaluation of learning outcome ⁴
<ul style="list-style-type: none"> • How do you evaluate your learning outcome of the different study activities (for instance in terms of knowledge, practical skills, new/strengthened competences etc.)? <ul style="list-style-type: none"> - Courses/ lectures/ seminars 2.4 (0.7) [86 resp.] - Project work, including project work with studies involving work experience 2.0 (0.8) [84 resp.] - Internships in or outside Denmark, possibly completed with a project report 1.0 [1 resp.] - Practical exercises/training (broadly defined), for instance 2.6 (0.9) [55 resp.] - Reading groups/study groups 2.2 (1.1) [41 resp.] - Preparation in connection with courses/lectures/seminars 3.0 (0.8) [85 resp.] - Other Activities 2.8 (1.2) [6 resp.]
Total evaluation of study activities in relation to targets ¹
<ul style="list-style-type: none"> • The study activities gave me altogether a strong basis for achieving the study programme's targets for the semester. 2.2 (0.8)
PROJECT WORK

<ul style="list-style-type: none"> • Type of project? <ul style="list-style-type: none"> - The final bachelor project [27 resp.] - Master's thesis [0 resp.] - Other project [56 resp.] • I prepared the project together with other students [83 resp.]
Group cooperation¹
<ul style="list-style-type: none"> • I think that the group formation process proceeded appropriately 2.2 (1.2) • In my opinion, the cooperation of the group was good 2.0 (1.0) • I think that I contributed constructively to the cooperation in the group 1.7 (0.6)
External partners
<ul style="list-style-type: none"> • Was the project prepared in cooperation with an external partner? (The question includes both projects 'ordered' from outside and cooperation on your/your group's initiative). 12 "Yes", 71 "No" • My learning outcome (for instance knowledge, skills, competences) of the cooperation with the external partner was great.¹ 2.2 (0.9)
Supervisor¹
<ul style="list-style-type: none"> • Did you have more than one supervisor? 73 "Yes", 10 "No" • The cooperation with the (main)supervisor functioned well (agreement about "the rules of the game", matching of expectations, etc.). 2.1 (0.8) • The cooperation with the other supervisors functioned well (agreement about "the rules of the game", matching of expectations, etc.). 2.1 (0.8) • How was the cooperation between the supervisors? 2.7 (0.9) • There was adequate support in the supervision in relation to... <ul style="list-style-type: none"> - the project methods 2.5 (0.9) - the academic content 2.1 (0.8) - the work process 2.8 (0.9)
Project work in general¹
<ul style="list-style-type: none"> • The possibilities and limits for choice of project subject were made clear. 2.2 (0.9) • We/I managed to carry out a project of high academic quality. 2.2 (0.9)
Problem-based learning (PBL)¹
<ul style="list-style-type: none"> • In the semester I experienced the problem-based and project-oriented approach to teaching as conducive to the development of... <ul style="list-style-type: none"> - my academic competences 1.9 (0.7) - my ability to define and formulate problems 2.4 (0.8) - my ability to analyze and deal with problems 2.2 (0.7) - my ability to plan a long work process and reach the goal in time 2.0 (0.8)
COURSES/LECTURES/SEMINARS
Syllabus
<ul style="list-style-type: none"> • How much of the syllabus for each course/lecture/seminar of the semester did you study?⁵ 63% (21%)
Student involvement¹
<ul style="list-style-type: none"> • In general the lecturers show responsiveness to the students' attitudes and wishes in connection with the planning and development of the programme. 2.3 (0.8) • I make use of the opportunity – when it occurs – to exert influence on the planning and development of the programme. 3.2 (1.0)
Expectations of and experience of courses/lectures/seminars¹
<ul style="list-style-type: none"> • [A] how important do you think that this condition is for good teaching (at the level you are studying) • [B] in your opinion, to what extent was this actually the case in the teaching during the semester <ul style="list-style-type: none"> - The teaching covers the syllabus A: 1.7 (0.8) & B: 1.9 (0.8) - The teaching gives perspectives beyond the syllabus A: 2.2 (0.9) & B: 2.8 (0.7) - The teaching is interesting and gets my attention A: 1.5 (0.6) & B: 2.7 (0.9) - The lecturers are open to questions or viewpoints from the students A: 2.4 (1.1) & B: 2.1 (0.9) - The lecturers indicate what has to be studied before each teaching session A: 2.2 (1.1) & B: 2.1 (1.1) - We students are well prepared A: 2.4 (0.8) & B: 2.9 (0.8) - The lecturers use different types of teaching A: 2.5 (1.1) & B: 3.2 (0.9) - Most often I leave the classes with a feeling of having learned something A: 2.0 (0.8) & B: 2.8 (0.7)
Project Unit (PU) and Study Unit (SU) courses²
<ul style="list-style-type: none"> • How would you evaluate your efforts in the project unit courses (PU) and study unit courses (SU) of the

semester? - Project Unit courses (PU) 72% (14%) [81 resp.] - Study Unit courses (SU) 73% (15%) [80 resp.]
THE SEMESTER IN GENERAL
Total outcome and study environment¹
<ul style="list-style-type: none"> • I regard the semester as essential for my educational profile. 2.0 (0.9) • The semester required a big work effort on my part. 1.8 (0.7) • The semester was in general an academic challenge. 1.7 (0.6) • The academic study environment among the students affected my learning outcome positively. 2.2 (0.9) • The group functioned socially well in the study environment. 2.6 (1.0)
PLANNING, INFORMATION, AND FRAMEWORK
Planning¹
<ul style="list-style-type: none"> • From semester start, I felt well informed about semester activities, including syllabi. 2.8 (1.1) • The planning of the semester activities was satisfactory (e.g. placing and length of the study activities). 2.7 (0.9) • The extent of study activities initiated by the study programme was adequate. 2.4 (0.9) • The examination plans were announced to the students in sufficiently good time. 2.4 (1.3)
Information¹
<ul style="list-style-type: none"> • Throughout the semester I felt well informed about... <ul style="list-style-type: none"> - practical conditions (cancellations, classroom changes, books that I had to buy, enrolment deadlines, etc.). 2.5 (1.2) - extraordinary events relevant for study work (for instance relevant guest lectures, inaugural lectures, PhD-defenses, debate meetings). 2.3 (0.9) - political conditions including the study board's work (student representatives, meeting times, agendas, etc.). 2.7 (1.1) - social activities in connection with the university (Friday bar, student parties etc.). 1.8 (0.6)
Framework¹
<ul style="list-style-type: none"> • The physical framework for teaching was good (classrooms, computers, AV-equipment, laboratories, etc.). 2.5 (1.2) • IT-facilities and services were good (for instance intranet/electronic conferences/newsgroups, home access to relevant materials and homepages, etc.). 2.7 (1.0) • IT were used appropriately on the part of the university, i.e. by lecturers, secretaries, IT staff, etc. 2.5 (1.0)

TABLE 3. Selected results.

¹ Scale: Ranging from 1 "totally agree" to 5 "totally disagree". Results: Sample mean value (sample standard deviation).

² Scale: Ranging from 0% "minimum effort" to 100% "maximum effort". Results: Estimated sample mean value (estimated sample standard deviation) [number of respondents].

³ Results: Sample mean value of hours (sample standard deviation of hours).

⁴ Scale: 1 "Very high", 2 "High", 3 "Average", 4 "Low", 5 "Very low. Results: Sample mean value (sample standard deviation) [number of respondents].

⁵ Results: Estimated sample mean value (estimated sample standard deviation).