

Learning *together*

- towards enhancing
the co-creation of
education

Aalto University
Teaching and Education Evaluation 2010–2011
Project Report

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President's *Greeting*



Aalto University was created on 1st of January 2010 from a merger of the Helsinki School of Economics, the Helsinki University of Technology and the University of Art and Design Helsinki. The purpose of the merger was to strengthen the Finnish innovation system by creating a new university concept that combined world class expertise in technology, business and design. The initiative is part of an extensive university reform in Finland and backed up by significant investments by the Finnish Government, the business sector and private benefactors.

Aalto University has a bold agenda to become a world-class university by the year 2020. To lay a solid basis for reaching such a goal, extensive benchmarking with the best practices of top international universities was carried out during the preparations for the new university. To deepen the analysis, a Research Assessment Exercise was conducted in 2009 and a Teaching and Education Evaluation is now being reported here. Both of these international evaluations and their recommendations give important feedback and guidance on key reforms that will be necessary on the road towards international excellence and recognition.

The results of the Teaching and Education Evaluation published herewith clearly indicate that Aalto University already has many excellent programmes, and highly motivated, professional teachers and very talented students. It is equally clear that there is also room for improvement, perhaps most urgently in the organization, funding structure and management of the programmes, and also in the pedagogical approaches and our attitudes towards teaching and learning. Above all, we must become genuinely international and part of the global knowledge community.

I want to thank our international Panels once more for their excellent work, and our faculty, staff and students for enthusiastic participation in this project. I believe that the project in itself has given valuable insight and ideas on how to improve our own work, and that the findings and recommendations of this report mark the beginnings of an extraordinary path to educational excellence at Aalto University.

21 July 2011

Tuula Teeri
President
Aalto University

Aalto University is a new multidisciplinary science and art community in the fields of science, economics, and art and design. The University is founded on Finnish strengths, and its goal is to develop as a unique entity to become one of the world's top universities. Aalto University's cornerstones are its strengths in education and research.
[More information: www.aalto.fi](http://www.aalto.fi)

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List of *abbreviations*

- BA = Bachelor of Arts
BSc = Bachelor of Science
CHEM = Aalto University School of Chemical Technology
ECON = Aalto University School of Economics
ECTS = European Credit Transfer and Accumulation System
ELEC = Aalto University School of Electrical Engineering
ENG = Aalto University School of Engineering
HOPS = Personal Study Plan
ICT = Information and Communication Technology
JOO = Flexible Study Right
KPI = Key Performance Indicator
MA = Master of Arts
MBA = Master of Business Administration
MSc = Master of Science
OPLAA = Quality of Education Committee
PBL = Problem-Based Learning
QA = Quality Assurance
RAE = Research Assessment Exercise
SCI = Aalto University School of Science
TAIK = Aalto University School of Art and Design
TEE = Teaching and Education Evaluation
WebOodi = an information system for administration and registration of information
about students, studies, and teaching
YOOP = Programme on Higher Education Pedagogy

Contents

Preface.....	9
Executive Summary.....	10
1. Description of the Teaching and Education Evaluation process.....	13
2. The External Panels' feedback and recommendations.....	18
2.1 Feedback and recommendations to the degree programmes.....	19
2.2 Feedback and recommendations to students.....	21
2.3 Feedback and recommendations to the leadership of the Schools and the University.....	23
2.4 Observations on the evaluation process and recommendations for improvement.....	30
3. Conclusions and major development needs.....	32
Appendices A:	
Feedback and recommendations from the External Panels.....	45
<i>Appendix A1. The School of Art and Design.....</i>	<i>47</i>
MA Applied Art & Design, Interior Architecture & Furniture Design, Textile Art & Design, Fashion and Clothing Design, Industrial & Strategic Design.....	48
Art Education and ePedagogy.....	52
Creative Business Management and Visual Culture MA.....	56
Design for Theatre, Film and Television BA+MA.....	60
Environmental Art.....	63
Film and Television BA+MA.....	67
Fine Arts.....	71
Graphic Design BA+MA, Photography BA+MA.....	75
New Media MA and Sound in New Media.....	79
Feedback and recommendations for the students of all degree programmes of the School	82
Feedback and recommendations for the leadership of the School and Aalto University.....	84
Observations on the evaluation process and recommendations for improvement.....	89

<i>Appendix A2. The School of Chemical Technology</i>	91
Chemical Technology.....	92
Material Science and Engineering.....	99
Feedback and recommendations for the students of all degree programmes of the School.....	105
Feedback and recommendations for the leadership of the School and Aalto University.....	107
Observations on the evaluation process and recommendations for improvement.....	110
<i>Appendix A3. The School of Economics</i>	113
Accounting, MSc.....	114
Accounting, Finance and Business Law, BSc.....	118
Business Law, MSc.....	121
Business Technology, BSc and Information and Service Management, MSc.....	125
Communication in Business and Economy, MSc and International Business Communication, MSc.....	128
Economics.....	132
Entrepreneurship, MSc.....	136
Finance, MSc.....	139
International Business, BScBA (Mikkeli).....	143
International Business, MSc (Helsinki).....	147
Management.....	151
Marketing, BSc.....	154
Marketing, MSc.....	157
Feedback and recommendations for the students of all degree programmes of the School.....	162
Feedback and recommendations for the leadership of the School and Aalto University.....	164
Observations on the evaluation process and recommendations for improvement.....	171
Writing Learning Outcomes in Higher Education.....	171
<i>Appendix A4. The School of Electrical Engineering</i>	177
Automation and Systems Technology.....	178
Bioinformation Technology.....	182
Communications Engineering and Master's Programme in Communications Engineering.....	186
Electronics and Electrical Engineering and Master's Programmes in Electrical Engineering and Micro and Nanotechnology.....	190
Feedback and recommendations for the students of all degree programmes of the School.....	194
Feedback and recommendations for the leadership of the School and Aalto University.....	196
Observations on the evaluation process and recommendations for improvement.....	199
<i>Appendix A5. The School of Engineering</i>	201
Architecture.....	202
Energy and HVAC-Technology.....	205
Geomatics.....	209
Landscape Architecture.....	212
Mechanical Engineering.....	215

Master's Programme in Environmental Technology (Lahti).....	218
Real Estate Economics.....	222
Master's programme in Real Estate Investment and Finance.....	226
Structural Engineering and Building Technology.....	229
Transportation and Environmental Engineering.....	232
Feedback and recommendations for the students of all degree programmes of the School.....	236
Feedback and recommendations for the leadership of the School and Aalto University.....	237
Observations on the evaluation process and recommendations for improvement.....	240
<i>Appendix A6. The School of Science</i>	243
Computer Science and Engineering and Master's Programmes in Mobile Computing – Services and Security, Foundations of Advanced Computing, Machine Learning and Data Mining, Service Design and Engineering and Bioinformatics.....	244
Engineering Physics and Mathematics.....	248
Industrial Engineering and Management and Master's Programmes in Service Management and Engineering and Strategy.....	253
Information Networks.....	259
Feedback and recommendations for the students of all degree programmes of the School.....	264
Feedback and recommendations for the leadership of the School and Aalto University.....	266
Observations on the evaluation process and recommendations for improvement.....	271
Appendices B:	
Teaching and Education Evaluation Documents.....	273
<i>Appendix B1.</i> The Project Organisation 2010–2011.....	274
<i>Appendix B2.</i> Instructions for Self-Evaluation for the Degree Programmes.....	275
<i>Appendix B3.</i> Questions for the Self-Evaluation.....	286
<i>Appendix B4.</i> Degree Programmes that were evaluated.....	297
<i>Appendix B5.</i> Composition of the Panels.....	298
<i>Appendix B6.</i> Timeframe for the Panels' Site Visit Week.....	300
<i>Appendix B7.</i> Sample of a Site Visit Week Programme (School of Engineering).....	301
<i>Appendix B8.</i> Guidelines for the Panels.....	305

Preface



Excellence in both research and education is the core of the success of Aalto University. The research assessment exercise (RAE 2009) built an important basis to focus and develop the new university's research activities. It was evident that a comprehensive evaluation of education was next in line and the Teaching and Education Evaluation (TEE) project was launched in the spring term 2010.

The TEE project will produce valuable information for developing teaching and education. The objectives, implementation and impacts of the evaluation can be organized according to three different perspectives: these are development-oriented evaluation, strategic steering, and boosting the prestige of the teaching.

The objective of development-oriented evaluation is to find the strengths and needs for necessary reforms of learning and teaching on the level of specific degree programmes. From the perspective of strategic steering, the evaluation results will be used in strategic discussions and resource dialogues between the leadership of the University, Schools and Departments. Re-allocation of resources aims at promoting collaboration of teachers and sharing of good practices, as well as rewarding excellent and innovative teaching, leadership of education and development. Moreover, the TEE project will help to make the quality of teaching and education more visible as a key factor of success. The appropriate evaluation methods for teaching merits and competences and the high priority of pedagogical education as part of professors', lecturers' and researchers' recruitment and promotion will have a profound effect on the learning and teaching culture at the University.

Besides the above internal rationales, the exploitation of the TEE results must be seen within a wider context. Our living environment, society and work are undergoing continuous, complex changes, which emphasize new ways of learning, creative thinking and collaborative activity. Clearly a great change is taking place in education and we have to re-evaluate and re-think the curricula and teaching methods of all programmes. The curricula must be based on the latest research knowledge and the future scenarios and competences of working life.

In a media-dominated society the media are strongly interlinked with learning and teaching too. Formal and informal learning become mixed and people use different media to share their competence, knowledge and skills. Students' means for collecting, processing and sharing information have changed, and this must also inevitably be reflected in teaching. There are already signs of changes in the paradigm of university teaching. The teacher is no longer an expert who plans and implements teaching for students, but more than ever a learning facilitator, co-creator and co-learner.

The Aalto University Teaching and Education Evaluation is an ambitious and important initiative. It gives us a great opportunity for the co-creative development process of learning, teaching and education. Now is the TEE time – the momentum to exploit the TEE results together.

On behalf of the TEE Project Team

Martti Raevaara
Vice President

Executive *Summary*

Our living environment, society and work are undergoing continuous and complex changes and challenges, which emphasize new ways of learning, creative thinking and collaborative activity. This should reflect the landscape of teaching and education. There is an actual need to re-think the curricula and teaching methods in all degree programmes. The Teaching and Education Evaluation (TEE) process at Aalto University consisted of two stages: a self-evaluation of the degree programmes, and an external evaluation carried out by six School-specific Panels including 41 experts from 11 European countries. Altogether 74 programmes were evaluated in the six Schools of the University. The TEE was carried out during the academic year 2010-2011, a stage of transition, as it coincided with the new university's start-up years, and several management and other organizational structures were still in the process of formation. The staff and students of the degree programmes who took part in the evaluation are to be congratulated on their efforts during the TEE process.

The purpose of the exercise was to evaluate some current practices concerning the planning, management, implementation and development of Bachelor's and Master's degree programmes. The goal of the evaluation was to discover both strengths and weaknesses, and to identify some best practices. The idea was not to compare programmes nor rank them in any order of superiority.

This report summarizes the main observations and recommendations, provides a reflection on the findings and conclusions to go forward, and includes the Panels' programme-specific reports as well as the outlines of the evaluation project. Besides the obvious results, it is important to understand the TEE process as a result too. The process, which embodied collaborative self-evaluation and reflection on the Panels' recommendations within the Schools and degree programmes, established, for its part, the new Aalto feedback and evaluation culture and enhanced the renewal of the degree programmes.

To promote the necessary changes and development work in learning and teaching culture and education the Teaching and Education Evaluation highlights the following action points. Aalto University

- improves the monitoring of the accumulation of study credits and progress in studies, and systematically follows up and supports students. The basis is students' well-being and commitment to their studies.
- focuses on the first-year students and their studies: develops the orientation, teaching methods, curriculum and learning environments.
- adopts a clear distinction between Bachelor's and Master's studies, a wider programme focus at the Bachelor's level, student-centred learning, flexible learning paths and curricula structure with optional and alternative study modules to encourage students' mobility, cross-disciplinary co-operation and international

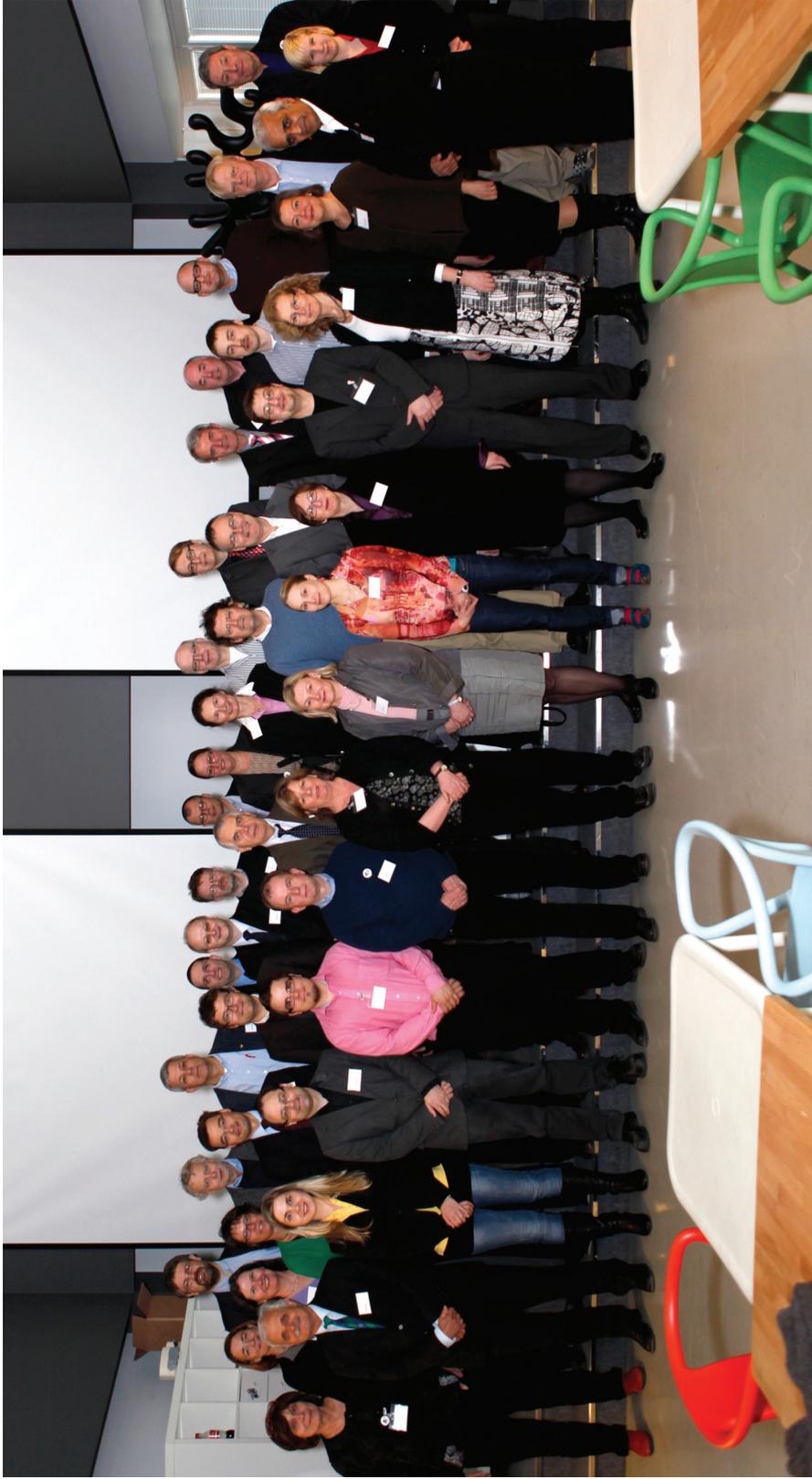
exchange (full implementation of the Bologna Declaration).

- designs curricula based on future scenarios and competences, defines the core contents and supports the student's personal study plan and his or her progress in studies.
- adopts an international, multicultural approach for educational models, learning and teaching methods as well as the recruitment of students and teachers.
- takes teaching merits and pedagogical education fully into account in the recruitment, promoting and awarding systems of teachers.
- provides pedagogical education for all teachers, based on meaningful pedagogical challenges and also provides competences to teach in English and in a multicultural learning community.
- provides a strong strategic leadership of degree programmes and education, with a system to allocate resources for teaching and the strategic reforms of degree programmes.
- develops systematic and appropriate evaluation methods and a regime for teaching and education, with an emphasis on active, encouraging interaction between students and teachers.

The TEE was the first Aalto University scale evaluation of teaching and education. The results, including the self-evaluations, give us excellent opportunities for a co-creative development process for excellence in learning, teaching and education. The TEE is not a zero point of improvements, as excellent development of education and teaching has been taking place in various Schools at Aalto University, and a great number of good practices were pointed out in the Panels' reports too.

Students and teachers are "owners" of learning and teaching and key actors in creating the new learning culture and the degree programme curricula, which are based on the latest research knowledge and the future scenarios and competences of working life. The University support services and structures will give assistance with reforms, but these will be carried out in Schools, Departments and degree programmes by teachers and students.

The Panellists



1. Description of the *Teaching and* Education Evaluation process

The Aalto University Teaching and Education Evaluation (TEE) was set in motion in spring 2010 and was carried out during the academic year 2010–2011. The evaluation was initiated and funded by Aalto University. The purpose of the Teaching and Education Evaluation was to evaluate the quality of some current practices concerning the planning, management, implementation and development of the Bachelor's and Master's degree programmes, to reflect on their relation and relevance to the best practices elsewhere and to provide feedback and recommendations for future development of the degree programmes. The evaluation focused primarily on educational procedures and practices rather than teaching approaches, individual teachers or the quality of learning results, for instance theses or productions. Moreover, as the degree programmes reviewed their present state against the specific development areas of teaching and learning outlined in the Aalto University strategy, the Aalto University leadership will receive information in order to refocus the current development areas for the next update of the strategy.

The specific aims of the evaluation were as follows:

- To identify the strengths and weaknesses of the degree programmes of Aalto University;
- To find and share the best practices, to develop next practices and to create innovative teaching approaches;
- To recognize areas that require specific action for improvement;
- To obtain information that can be used for enhancing students' learning;
- To obtain information that can be used for supporting teachers' work;
- To support the setting-up of Aalto University's teaching and education quality assurance system;
- To develop the implementation of the evaluation process for future evaluations;
- To use the feedback and recommendations for continuous improvement and connect them to the annual planning process.

The quality of teaching and learning, as well as the educational processes, is an outcome of many factors where teachers, students and the entire learning environment constitute a complex and dynamic entity. Moreover, quality usually has many interpretations. These aspects add to the challenge of defining the most essential issues in order to enhance the quality of teaching and learning. The TEE was not based on predetermined evaluation criteria, and Aalto University was not seeking accreditation nor was it about auditing quality systems. The aim of the TEE was to identify the good practices and

some salient issues for the further development of degree programmes with the help of peers from other universities.

The Organization of the TEE

The project manager was appointed in May 2010 to co-ordinate the evaluation, and President Tuula Teeri nominated a Steering Committee for the evaluation in June 2010. Each Aalto University School appointed a co-ordinator by September 2010. The School-specific TEE co-ordinator's tasks were, for example, to communicate between the School and Evaluation Project Team, to make sure that the self-evaluation reports were submitted on time and to participate in organizing the international Evaluation Panels' site visit. The Evaluation Project Team consisted of the project manager and a planning officer, with some administrative support at times. During the site visit week the Evaluation Panels were accompanied and assisted by six student guides. Vice President Martti Raevaara was in overall charge of the TEE. The evaluation organization is introduced in Appendix B1. The project was originally called the Teaching Evaluation Exercise; however, the word 'Education' was added into the title later and 'Exercise' was dropped out.

The TEE's Approach

The principles for the planning and implementation of the TEE are based on the view that evaluation is a formative and appreciative process rather than a summative and judgmental one. Evaluation is naturally framed by the context in which it occurs and by diverse interests; however, it should be regarded as an interactive and collaborative learning process for all. The salient point is that the evaluation aims for enhancement rather than defines what is right or what is wrong¹ and the point of the TEE was not to rank degree programmes.

The approach of the evaluation process was adapted from the enhancement-led four-phase evaluation model and the evaluation guidelines promoted by the Finnish Higher Education Evaluation Council². Moreover, previous evaluations carried out at the Schools and at some other universities were benchmarked. The process and focus were discussed and developed through consultations with several individuals and groups, and were finally accepted by the TEE Steering Committee³. The leading principle for designing the process was to create a forum for internal feedback and participative discussions during the self-evaluation stage between various teachers within the programme and between teachers and students. This stage would be complemented

¹ Cuba, E.G. & Lincoln, Y.S. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.

² Moitus, S. & Saari, S. (2004). From methods to development. The evaluation methods of the Finnish Higher Education Evaluation Council 1996-2003. Abstract in English. (In Finnish: Menetelmistä kehittämiseen. Korkeakoulujen arviointineuvoston arviointimenetelmät vuosina 1996-2003.) The Finnish Higher Education Evaluation Council Publications 10:2004. Helsinki.

³ The involvement of Dr Anu Yanar in designing the self-evaluation questions and the analysis of feedback is acknowledged.

by the external Panels' interview sessions. The feedback and recommendations from the Panels form the basis for the actions to enhance teaching and learning quality.

It should be pointed out that although the original title of the evaluation assignment refers to teaching, the evaluation entails a broader perspective. The focus was on the education within the degree programmes rather than the teaching. The self-evaluation questions contained some aspects which could be considered as quality auditing as the areas of evaluation were programme planning, implementing and developing.

Implementation of the evaluation

The planning stage

The preliminary planning started in May 2010 and the more detailed planning took place in August-September 2010. The actual evaluation process was started in November with the decisions about the programmes to be evaluated, instructions for the self-evaluation, and the starting of the recruitment of the panel members. Further stages were planned as the project proceeded. More details and the timeframe are described in Appendix B2.

Self-evaluation

Those involved in the degree programmes carried out the self-evaluation stage according to the instructions by discussing the issues outlined in the self-evaluation questions and compiling a self-evaluation report (See Appendix B2 for the Instructions and B3 for the self-evaluation questions). Altogether there were 74 programmes evaluated, but the number of self-evaluation reports was less, as two or more programmes, in some cases, produced a joint report. The self-evaluation stage expired at the end of January, when all programmes delivered their reports electronically at the wiki-area created for this purpose. The self-evaluation reports were not made public by the Evaluation Project Team; however, the Heads of the degree programmes were encouraged to make the self-evaluation reports openly available for other members of the University community. Appendix B4 provides the list of the programmes evaluated.

The students were encouraged to participate actively in the self-evaluation process of their respective degree programme. The importance of student involvement was stressed in the self-evaluation instructions. Moreover, groups of students at each School, independently, provided a statement concerning their experience of studying in that School. Students were also asked for their views by means of a student feedback questionnaire and the summary of the questionnaire was part of the materials sent to the Panel members.

Peer review by external evaluation Panels

The external evaluation was carried out by international Panels. The experts were appointed by the President of Aalto University after the nominee had given his or her consent. There were six Panels, one for each Aalto School. In each Panel there were 5–9 members including a Finnish academic member and a Finnish student member. The size of the Panels varied according to the number of degree programmes to be evaluated in each School. The Panels had altogether 41 members from 11 European countries. The compositions of the Panels are introduced in Appendix B5.

The principles for the composition of the Panels were the following: expertise in one

of the subject areas of the respective Aalto School, versatile teaching and pedagogical experience, evaluation experience and interest in educational development. The Schools, the Steering Committee and educational developers were asked to propose experts for the Panels. The Steering Committee worked out the preferences for the Panel chairpersons and other members according to the criteria that were set. For each Panel the chairperson was recruited first.

The self-evaluation reports of the degree programmes were the main documentation sent to the Panels. The number of reports per Panel differed according to the number of the programmes to be evaluated within that School. Supplementary information about Aalto University and its Schools, the Finnish Higher Education system as a whole, a summary of the student feedback questionnaire, as well as statistical data, was sent to the Panel members. The panellists also received the reports compiled by units/Departments that provide service teaching (basic courses during the first years of studies). The units had requested the opportunity to describe their educational provision and goals for the Panels, as the degree programme reports would probably bring out issues concerning these first-year compulsory studies. There were altogether six self-evaluation reports and these were for background information only and the provision of these studies was not evaluated.

Prior to the site visit the Panel Chairs had an online meeting to introduce the TEE goals, the process and the assignment for external evaluators. The site visit took place from 10 to 15 April 2011. The overall timeframe for the site visit week was similar to all the Panels; however, some adjustments were made depending on the number of degree programmes to be evaluated. The overall timeframe for the site visit week is Appendix B6 and a more detailed programme for one of the Panels is provided in Appendix B7 as an example.

During the site visit week the Panels interviewed Deans, Vice Deans, Heads of the Degree Programmes, other teaching staff, Heads of Study Affairs, Planning Officers, alumni, the employer's representatives and students. The persons interviewed were invited by those involved in degree programmes, Departments or Schools. Approximately 400 people were interviewed during the visit week. The School-specific co-ordinators were key persons in organizing the interviewees within their School. The Panels could also make suggestions for interviewees and a time slot was reserved for extra interviews and short visits to see the facilities as requested. At the end of the week the Panels presented their first impressions at the closing seminar. The Panels' Feedback and recommendations reports were submitted by the Chairs in early May and provided feedback to degree programmes, students, the leadership of Schools and Aalto University, and feedback about the evaluation process. The Guidelines for the Panels document outlined the structure for the report (see Appendix B8). The unedited reports were sent to the programmes for correcting any errors in facts or terminology; however, no additions to the content were accepted, nor was any rewriting of the text.

The Final TEE Report

The TEE Report introduces the Teaching and Education Evaluation process and summarizes the results. The Evaluation Project Team compiled the Final Report from the description of the evaluation process (Chapter 1), condensed summaries of the feedback at the University level (Chapter 2), the conclusions (Chapter 3), Appendices A1-A6 forming the final versions of the School- and programme-specific feedback

reports, and Appendix B1-B8 containing instructions, guidelines and background information about the TEE project.

The Panels' feedback and recommendations are organised as four sections in Chapter 2: Feedback and recommendations to the programmes, only best practices as a summary (2.1), feedback and recommendations to students (2.2), feedback and recommendations to the leadership of the Schools and the University (2.3), and observations on the TEE process and recommendations for improvement (2.4). This will be followed by the presentation of conclusions and actions leading to future development (Chapter 3).

The condensed summaries of the feedback in Chapter 2 have been produced in the following way: The analyses for the condensed summaries were carried out by the project manager with the support of Dr Anu Yanar at the Unit of Strategic Support for Research and Teaching.

The feedback to programmes was not summarized; the reason for this will be given in Chapter 2. The entire original reports can be read in the Appendices. However, there is a short review of the best practices identified by the Panels. The best practices were selected from the reports and a preliminary list was made. Then the items were condensed into broader categories by keeping some of the details. The analysis of the feedback to the students was carried out by seeking the same or similar issues in all Panels' reports and then paraphrasing them to form a summary. The analysis for the recommendations to each School was carried out by using each Panel report's headline structure and paraphrasing the issues to form a summary.

The Panel Chairs were invited to visit Finland in mid-August 2011 in order to accept and approve their feedback in the Final TEE Report. The discussions that were held during their visit helped to clarify and re-formulate some issues in the Final Report.

2. The External Panels' *feedback and* recommendations

This chapter of the Report summarizes the feedback and recommendations of the external Evaluation Panels. The Panels were asked to summarize their feedback and recommendations according to a template, which had the following parts:

Part A

Feedback and recommendations for the teaching staff of the degree programmes:

- The presentation of the Panel's evaluative overall observations about issues presented in the self-evaluation report. The first section should end with the Panel's conclusions and evaluations of the degree programme's strengths.
- Evaluative feedback concerning the three main themes of self-evaluation (presented in Chapter 3 of the self-evaluation report). Please use the following scale: absent/poor, emerging, good, excellent. Give reasons for your feedback.
- List of best practices concerning the three main themes of self-evaluation (max. 3).
- Recommendations for improvement. The Panel shall prioritize its recommendations so that it will first present recommendations that can be implemented in the short term and then give recommendations for long-term development. Furthermore, the Panel may raise other possible observations.

Part B

Feedback and recommendations to students of all the programmes of the School.

Part C

Feedback and recommendations to the leadership of the School and the Aalto leadership.

Part D

Observations of the evaluation process and recommendations for improvement.

The full School-specific Panel reports are available in Appendices A1-6. Chapter 2 follows the order of the template outline. When one is reading the feedback of Parts B-C it should be noted that there are several overlapping and interconnected issues that are addressed both to the students and to the leadership of the Schools and Aalto University.

2.1 Feedback and recommendations to the degree programmes

Each Panel's feedback and recommendations for the degree programmes (Parts A) can be read in the Panel reports, Appendices A1-A6. There was no attempt to draw up a summary of each programme's feedback for several reasons. It is relevant to study the programme-specific feedback as an entity and to interpret reflection on the issues highlighted by the Panels in the original context of the programmes evaluated. Moreover, the content, as well as the structure and style in the different Panel reports, varied considerably and made it difficult to create a coherent, programme-based summary. Within the limited timetable, it would have been too challenging to extract an analysis of the texts that had already been condensed, and any analysis of this feedback would have been de-contextualized and considered unjust.

As part of the feedback to the programmes the Panels were asked to list a maximum of three of the best practices they had identified from the self-evaluation reports and during the interviews (Template Part A, Section 3). An overview of the best practices identified by the Panels will be presented next.

The best practices overview was compiled by analyzing and collating the practices mentioned in the Panels' reports. The overview is not an exhaustive list, but shows the remarkable repertoire of good practice in the planning, implementing and developing of teaching and learning. However, it is worth noticing, as the Panel of the School of Science says: "The Panel found much evidence of good practice in learning and teaching and is convinced that there is plenty more which did not become apparent from the self-evaluations and interviews". The presentation of the best practices varied in the Panel feedback reports. The report template provided a place for listing the practices that were identified. Nevertheless, some Panels preferred to refer to feedback given in another place in their report. It is also possible that the Panels had different criteria for identifying best practices.

It was, in some cases, challenging to identify exactly what the actual best practice was when it was described as "open and friendly atmosphere in improving teaching teamwork among staff", "openness to try and develop new ideas", "committed programme staff" or "strong focus in Quality Assurance", or "teachers are stated by students to be easily accessible" or "excellent facilities". Although these kinds of practices are important observations, they have not been included in the overview. The criterion for selecting a sample is that the practice is highlighted by the Panel in a recognizable way. The Panel of the School of Electrical Engineering wished to highlight the excellent School-level best practice, namely the Quality of Education Committee, which develops teaching, interviews applicants for teaching positions, evaluates demonstration lectures and develops teacher tutoring.

The Panels mentioned the following:

- Informal and formal curriculum, programme and course development task forces and committees that meet at regular times. Teaching development events. Students invited to participate.
- Research linked or well combined with education and teaching processes.
- Co-operation and dialogue with other teachers, alumni, employers, industry and other stakeholders. External and internal partnerships. Benchmarking other programmes, universities and research institutes.

2. The External Panels' feedback and recommendations

- Cross- and multi-disciplinarity promoted, searching for complementarities, collaborating with other programmes. Contributors from other disciplines, guests, specialists, lecturers, part-time teachers. Co-teaching, dialogical teaching, sharing teaching, teacher co-operation, staff collaboration. Feedback between staff, peer reviewing.
- Bologna implementation successful.
- Good student feedback practices, collecting and handling methods, good response rate.
- Support and encouragement for internal and external mobility. Mixing international students and Aalto's own students in order to exchange experiences.
- Programme-specific intended learning outcomes defined, and intended learning outcomes between courses and modules linked.
- Mapping core competences, clustering courses around core competences. Developing professional skills and support for competence and professional development.
- Good model for introductory courses, good core programme scheme, well-structured programme, synchronization and integration of courses or disciplines. Basic studies well integrated and linked to later studies. Optional studies described well. Developing service teaching. First-year students' reception well organized. Monitoring credit accumulation and analyzing reasons for low throughput at the beginning of studies.
- Student support, counselling and tutoring well organized. Personal Study Plans working well. Flexible and tolerant attitude for progression, customized study plans. Students monitor their own learning and do self-evaluation by means of learning reports, diaries, notebooks and portfolios. Promotion of good study habits.
- Variety of creative methods to give feedback to students. Collaborative evaluation of learning products, assignment-based evaluation. Blind marking of coursework by two teachers. Clear assessment criteria.
- Variety of teaching methods and new solutions such as assignments, projects, case studies, problem-based-learning, hands-on tasks, learning by doing, creative real-life projects and experiments. Joint projects with teachers and students, students visit internationally important events, participation in competitions. Information and communication technology used in a variety of ways and including novel solutions. Students as assistants and tutors.
- Pedagogical research followed, teachers' own experimentation and systematic improvement of teaching in collaboration with students, attending pedagogical and educational development conferences, participating in pedagogical training.

2.2 Feedback and recommendations to students

Each Evaluation Panel addressed feedback and recommendations to the students of all the degree programmes in that School (template Part B). This part of the Panels' reports is often addressed also to the leadership of the School and the University.

The Panels appreciated meeting motivated and talented students who gave an open and honest impression during the interviews. The Panels highly recommend that the students take an active role and, together with teachers, create a community of learning that shares a passion for learning and discovery. Within this learning community students should consider themselves as active partners and co-creators of knowledge. Two Panels put forward the idea of drawing up a Student Charter in collaboration with students and teachers. It would describe the vision, the values and the University as a community of learning and what is considered as "good student citizenship".

Students are recommended to take an active part in improving the quality of their education and they should also be given larger responsibility for their part in creating the quality culture. Students should be recognized as part of the Aalto leadership structure and should therefore have the opportunity to promote changes proactively. For instance, students should be involved in reviewing and revising their School's vision, educational provision and curriculum.

The Panels congratulate the work of the Student Guilds and Associations. They are active, qualified partners who have a major role in the social side of student life as well as co-operating with degree programmes and creating networks outside the School. However, the Panels were concerned that the Student Guilds and Associations should not have too much answerability for tasks that are the responsibility of the teachers and administration. A chart that clearly shows the sharing of responsibilities should be drawn up.

Students cannot be assumed to be experts in teaching or pedagogical solutions, however, they should constructively challenge their teachers in the degree programmes, and the leadership of their School and the University; they should suggest new approaches in teaching methods when appropriate; they should take responsibility and be part of quality culture and management within the degree programmes, their School and the University. Students have an important role in developing together with their teachers a learning environment that supports learning, but they are not responsible for the development of teaching. Nevertheless, they should appreciate all opportunities that enhance their learning and development.

The Panels urge students to demand a common study counselling system that is proactive, and acts as a safety net in case their studies are not progressing. Moreover, students should request more feedback on their learning progress and development as professionals in their fields. On the other hand, the offered counselling and feedback should also be actively exploited.

The Panels encourage students to be more active in using the opportunities that are provided of giving feedback on matters in their learning environments that do not support their learning. However, one Panel points out that some features the students praise are not recommended because they are not optimal for learning. The Panel reminds us that "sometimes students' suggestions are based on an approach where passing the course has become the primary goal, and they forget that learning is actually what it is all about". Student feedback is important and has to be interpreted from a

2. The External Panels' feedback and recommendations

learning perspective. Following this point of view, it is essential that students also get feedback on their feedback so that they know why some of their feedback cannot be acted on.

The Panels recommend developing the culture of internationality, mobility and diversity further by creating an environment where different cultures integrate actively, student and staff mobility is encouraged and diversity is valued. One Panel also recommends paying attention to gender balance.

Students are encouraged to mix thoroughly with students from other programmes and especially with international students rather than remain with peers who share similar backgrounds and interests. Aalto University, the Schools and students are urged to take internationalization seriously. It is recommended that students capitalise on the opportunities for international exchange programmes. The University should ensure that each programme has an international mobility window, with a clear policy for recognition and transfer of credits towards the home degree. It should ensure that intra-Aalto mobility is feasible in practical terms of logistics, in access to relevant courses, and in the ease of recognition and transfer of credits towards students' own degree courses completed in another Aalto School.

2.3 Feedback and recommendations to the leadership of the Schools and the University

The following six School-specific summaries are compactions of the issues outlined in the Panel reports.

The School of Art and Design (For the entire report, see Appendix A1.)

There were altogether fifteen self-evaluation reports. The number of feedback reports is ten as some programmes were grouped together with a shared report. The Panel for the School of Art and Design consisted of eight members (see Appendix B5).

The Panel has outlined their feedback (template Part C) under the following themes: Strengths, Weaknesses (Coherence, Educational experience and Student experience), and Recommendations (Building strategic coherence, Modernising the curriculum, Ensuring quality and world-class excellence, and Embedding a common student experience).

The Panel considers that the small intimate, professionally focused education in art and design is a strength. The entry is very select, and education fosters high artistic values and the professional development of students. The staff–student ratio is enviable and the programmes offer students a customized study track.

The Panel is concerned that the Departments and programmes seem to be very independent and there appears to be very little evidence of connections and cross-disciplinary activity between the programmes. The Panel thinks this disparity may also be one of the factors contributing to the dissatisfaction about available resources. The students seem to have many choices, the number of students per programme is small and the degree completion time is flexible. However, all these contribute to an inconsistency in the quality of education. The Panel believes that a small intimate learning environment can have drawbacks, as it does not foster a common student experience. The quality of students' learning experience, supervision and feedback should be comparable, and assessment methods should be consistent and the criteria used transparent. Intimate and personalized relationships between the staff and students potentially create atmosphere where students are insufficiently challenged by new ideas.

The Panel questions the appropriateness of the traditional “atelier” teaching/learning model, as it too easily emphasizes the individual staff member's/professor's subjective view and creates a tension between the educational and the professional missions. This problem is manifested in the tendency to overemphasize the final products over the learning process.

The Panel urges far more rigorous tracking of graduates in order to understand future demands and career opportunities. At the moment the Personal Study Plan (HOPS) is used merely as a simple study plan, while it could potentially be used as a Personal Professional Development Plan coupled with efficient guidance for student learning and employability.

The Panel suggests several issues to enhance the quality of the degree programme. The School should build a shared vision for the future – for the School itself and for the School as part of Aalto. Based on the vision for the future a strategic coherence

that is gained by stronger steering and leadership is needed. There should be open discussion about resource allocation and making the programmes' cost factors visible. The School should review the programme provision, modernize the curricula and ensure consistency in regulations concerning assessment and feedback.

Students' representation in programme development should be strengthened and formalized. The student feedback system should be updated and students should be active partners in educational development. More formal engagement with key stakeholders should also be part of the curriculum development. Teachers should be required to participate in pedagogical training, since it is important to have a profound pedagogical understanding of how to support not only the attainment of professional skills, but also a student's learning process.

A Student Charter demonstrating good citizenship in studying should be drawn up in conjunction with students; the Charter would describe the vision, the values, and the University as a community of learning.

The School of Chemical Technology (For the entire report, see Appendix A2.)

Two programmes were included in the evaluation. The Panel for the School of Chemical Technology consisted of five members (see Appendix B5).

The Panel outlined their feedback (template Part C) under the following themes: General, Feedback, Mobility, Curriculum development, Resources, and Teacher training and teaching/learning.

The Panel suggests that the School should define its long-term (up to 2020) vision and strategy in research and education and align this with the new strategy of Aalto University. There seems to be lack of transparency and therefore, a more transparent and participatory process involving all staff, students and stakeholders is recommended. The Panel paid attention to the need of defining the line of command with decision-making capabilities, command of resources and power of action and positions with well-defined powers to make decisions. The Panel suggests there should be clarification of the responsibilities between the School leadership and Heads of Degree Programmes.

The student feedback system needs to be updated, and feedback from a variety of issues such as the success of a programme, workloads, learning difficulties, obstacles, and practical matters should be collected. Diverse and systematic ways of collecting and giving feedback should support developing education, and issues such as course contents, learning outcomes, curriculum design and enhancing the quality of the learning environment should be included in the student feedback questions. It is recommended that student feedback should be developed by refocusing the questions to evaluate teaching methods and strategies/approaches instead of the teaching capabilities of individual teachers.

The Panel recommends benchmarking other similar institutes to stimulate development. Moreover, it would be beneficial to find out from industry their views about the challenges in the working life of the future. Overall, more diverse forms of communication with industry are recommended in order to hear the expectations for future working life and how these can support the development of the programmes.

The Panel advocates creating practical support for students concerning mobility, and domestic and international exchange study periods. The curriculum should foster

flexibility in allowing incorporation of studies from elsewhere. Mobility also entails a teacher exchange which would stimulate educational development.

The Panel observes that the curriculum development process is unclear and lacks transparency; they suggest the following improvements: there should be an increase in transparency and collaboration for processing the new development of modules, and for Bachelor's and Master's programmes by involving teachers, industrial contributors, the University and School management and students. The role of those involved in curriculum development should also be clearly defined. The module system should be modified to allow the support of flexible studies and mobility.

The Panel suggests that the degree programmes should receive directly allocated resources for the development of courses, pedagogical development, the employment of permanent teaching staff, and the updating of laboratory facilities.

The Panel appreciates the openly recognized need for more pedagogical training and it proposes participation in courses and conferences in educational development. The Panel pointed out the need to increase the use of more contemporary and student-centred teaching methods. The Panel encourages the leadership to find forms of accepting teaching merits as part of career development. Moreover, the Panel regards it important to evaluate teaching competence when new staff is recruited.

The School of Economics (For the entire report, see Appendix A3.)

Altogether fifteen programmes were included in the evaluation. The number of feedback reports is twelve as some programmes were grouped together with a shared report. The Panel for the School of Economics consisted of nine members (see Appendix B5).

The Panel focused their feedback (template Part C) on the Aalto University Executive Leadership Team and School of Economics Leadership Team and outlined it under the following themes: Co-Leadership, Governance, Incentives for internal mobility, Addressing resources, Classroom facilities, Aalto University alumni, Articulating the value of the School in the new Aalto University, Instilling entrepreneurial culture, Implementing Bologna, New programme development, Students' part-time jobs as a resource, Students and alumni as partners in programme planning, Recruitment, promotion and pedagogical competencies, and the Relocation issue.

In their recommendations for Aalto University leadership, the Panel suggests that the co-leadership and integration of the leadership teams in the six Aalto Schools as the Aalto University Management Team are addressed. The Panel encourages the clarification of the delegation of powers to make decisions between the University and the Schools and an increase in transparency in the decision making processes. The Panel also suggests that the Programme Directors/Heads should have their own budgets. In conjunction with the transfer pricing for internal mobility for students and staff, unit costs at the programme level should be worked out. The Panel notes that the mobility of students and the teaching faculty is still modest; the reason for this may be that there are no incentives to encourage this.

The Panel recommends that all Aalto University teaching staff participate in pedagogical training. The criteria for pedagogical competencies should be made more explicit and transparent when the University is recruiting new academic staff, as well as when it is promoting existing academic staff. All teaching staff should be encouraged

to continue professional development. To overcome immediate challenges, such as mass-lecturing or the application of small-group-based learning methods, teachers should be acquainted with the pedagogical philosophy of these methods. The Panel also recommends investing more in a flexible learning environment that supports a variety of teaching methods.

The Panel acknowledges the importance and success in the accreditation of degree programmes at the School of Economics and the Panel identifies this as one of Aalto University's strengths.

The Panel notes that across the programmes' self-evaluation reports and interviews there is a plea for more money. The Panel acknowledges that adequate resources are important; however, they recommend reallocating existing resources and actively searching for new ones rather than just complaining and waiting for more resources. Overall, the Panel calls for more entrepreneurial culture, i.e. looking for opportunities and working around problems rather than concentrating on the obstacles and waiting for the problems to be solved.

The Panel report includes instructions for further clarification of the Learning Outcomes and the need to systematically examine them across the programmes. (See the document by Dr Simon Sweeney at the end of the Panel Report for the School of Economics, Appendix A3.) Adopting the Learning Outcomes approach is a crucial part of achieving student-centred learning and will support the programme-driven design of degree programmes. The future of the current basic studies component also needs careful examination. At the moment it seems to be insufficiently internally aligned to the learning outcomes of individual programmes.

The Panel noticed that students' part-time jobs were almost categorically referred to as a major problem that reduces the investment of time and energy that students put into their studies. The Panel offers a suggestion whereby students' part-time work experience is turned into a resource in the curriculum and in learning.

The Panel recommends that although students are represented in the programme committees, their number as well as the number of alumni representatives could be increased. The systematic involvement of alumni was seen as an untapped resource.

The School of Electrical Engineering (For the entire report, see Appendix A4.)

There were altogether four self-evaluation reports. The Panel for the School of Electrical Engineering consisted of six members (see Appendix B5).

The Panel outlined their feedback (template Part C) under the following themes: Career and incentive structures, the Resource allocation system, and Systematic approach and Course development.

The Panel had observed that forming Aalto University had caused both excitement and apprehension among the people they had interviewed. There are expectations, especially regarding an increase in funding for carrying out new developments. However, the Panel urges the leadership to clearly communicate the process of change, and the principles of allocating funds, and to clarify that by creating something new also means giving up something that already exists – as the Panel worded it, “to do more of the same is not the point”.

The Panel regards it as important that merits in teaching are as equally valued as

merits in research. Eligibility requirements when teaching staff are being recruited should include education about teaching and learning in higher education. Developing competence in teaching should also be part of the awards and promotion systems. Future challenges demand a strategic approach in developing professional competence in higher education teaching.

The Panel believes that the repeated mantra “we do not have resources” is misguided. Even if it is partly true, however, it could also indicate lack of knowledge of the actual resources, their allocation and the costs of programmes. The Panel was surprised to learn that Heads of Degree Programmes do not have a budget allocated to them. Therefore the Panel proposes that the Heads’ responsibilities and resources should be defined better. There may also be a lack of knowledge about alternative teaching and learning methods and cost-effective ways of teaching. The Panel recommends a thorough examination of the course structure and number of courses. The danger is the proliferation of courses without connecting them to the intended programme learning outcomes.

There also seems to be a widespread sense of helplessness and making excuses as if it were someone else’s problem. This is expressed as “we do not have resources”, “students are not motivated” or, indeed, “teachers are not motivated”. The Panel, however, suggests some ways in which to move forward to deal with the problems in a constructive way.

The Panel advocates a systematic approach to developing degree programmes by enhancing pedagogical skills, defining learning outcomes for programmes and aligning this to courses, giving guidelines for designing courses and making coherent assessment and feedback procedures. The Panel suggests an increase in participation in pedagogical training as part of professional development for teachers. The Panel was very impressed by the work of the OpLaa committee (The Quality of Education Committee) and mentioned it as a good example of developing teaching and learning.

The School of Engineering (For the entire report, see Appendix A5.)

Altogether ten programmes were included in the evaluation. The Panel for the School of Engineering consisted of seven members (see Appendix B5).

The Panel outlined their feedback (template Part C) under the following themes: Resource allocation, Incentives for developing programmes, Clarifying the programme structures and management, Student progress, Support and guidance for students, and Student feedback systems.

The Panel finds that the programmes that were evaluated were mature and well-established, and essentially functioned well in their present forms. However, the Panel urges risk-taking and not complacency, as stability does not lead to excellence.

The Panel recommends introducing a more transparent and output-based resource allocation system with incentives. The incentives should be related both to research and good quality teaching. The Panel notes that at present the performance indicators evaluating the operation, productivity and development of degree programmes do not support and reward development efforts in teaching. The Panel also suggests clarifying the organizational structure of the programmes, in particular, making the programme entities clear, and explaining how responsibilities, powers to make decisions, and resources are shared when the programme is run by several Departments. In conjunction with this, the role and powers of Heads of Degree Programmes should be clarified.

2. The External Panels' feedback and recommendations

The Panel comments about the blurriness between Bachelor's and Master's programme levels. The panellists found the "Learning Outcomes" approach rather weak at the programme level, although it was used in composing course entities. The Panel also makes remarks about the high number of courses available, some of which do not seem to have been recently updated in terms of relevance or methods. However, the Panel appreciates that there are already efforts in reducing courses and defining their provision, and the Panel encourages a participative process that also involves students in the work of development. Whilst these actions are going on, the Panel urges the School to activate dialogue concerning the teaching of basic studies in mathematics and physics. It was evident that the programmes were not satisfied with the basic studies provision. The Panel recommends joint discussion about the role, contents, methods and timing of the basic studies during the students' learning path. The development of the programme should also address the issues of domestic and international mobility.

The Panel is concerned about the students' low credit production rate and low intensity of studies. This seems to be an accepted feature; however, the Panel thinks that this leads to drop-outs, the excessive time in which a degree programme is completed, parallel work and inefficient teaching in student groups whose members are of varying abilities. The Panel does not think that the students' high workload is due to the excessive total amount to be learned, but is rather a scheduling problem.

The Panel suggests that students would be activated if counselling and advisory systems were further developed. The support system should be more systematic and proactive rather than just reactive. Whereas the Departments do offer such support, it is the Panel's view that it works because the student guilds are voluntarily taking responsibility for support of and advice on studies. A big credit should go to the student guilds; however, the Panel recommends that these activities should not be entirely their responsibility.

In order to develop teaching and learning together with students it is vitally important to have well-functioning feedback systems where the system works and the feedback is utilized. The Panel advocates a more systematic student feedback system concerning programmes and courses. There seems to be widespread criticism of the existing feedback systems. The student response percentage is low and endangers the reliability and validity of the feedback. The Panel recommends developing a versatile system linked to a quality assurance system and, in general, the quality issues should be increasingly addressed.

The Panel advocates that the Aalto University policy statement should emphasize the connection between research and teaching. The policy should be followed by incentives to Departments and individuals to promote this progress. The Panel recommends pedagogical education for everyone involved in teaching.

The School of Science (For the entire report, see Appendix A6.)

There were altogether four self-evaluation reports. The Panel for the School of Science consisted of six members (see Appendix B5).

The Panel outlined their feedback (template Part C) under the following themes: Leadership, Responsibilities, Pedagogic Development, Human Resources Policy, Student Learning Experience, Internationalization, and Funding and Industry

Involvement.

The Panel encourages the enhancement of a more proactive and stronger strategic leadership at all levels of the organisation. The leadership of the School should be a genuine part of Aalto University leadership. The Panel observes the need for developing a governance model with clear roles and mandates which support change and development. The Panel proposes that there is a need for clarifying responsibilities, status, mandate, and resource allocation to the Heads of Degree Programmes. The Panel also points out that there should be more pronounced educational leadership roles at all levels. Advancing the quality of education even further requires more decisive and strategic thinking in educational leadership.

The Panel was pleased to find evidence of good practice in learning and teaching and excellent teachers. Since the goal is to provide high-quality research and education and an attractive environment for learning and research, the Panel urges all members of staff, together with students, to create a quality culture and common learning community. It is evident that there are many good teaching practices; the Panel proposes to create a mechanism for sharing good practice, and raising awareness of teaching and learning developments, as well as making pedagogical training compulsory at Aalto University. The Panel thinks that the present mechanisms for ensuring that the academic staff are up to date with developments in teaching and learning practices are insufficient. The pedagogical training of teachers should be utilized in a more strategic way.

The Panel notes the need to clarify the human resources policy from the point of view of imminent retirements and also of the gender balance. There is also the suggestion to add diversity by recruiting staff with an international profile. International mobility should be encouraged for staff and students. However, it is just as important to make sure the incoming international students are made welcome and integrated into the local learning community. This seems to be insufficient at present.

The Panel expressed their concern about the overall learning experience of students. The Panel paid attention to student well-being, care and support. Responsibility for support and guidance cannot rest solely with student guilds even if they are very active in this respect.

There seem to be insufficient tracking of students and limited knowledge of their learning experience. Although the Panel appreciates the Finnish Higher Education culture of flexibility in study and part-time work, this cannot mean that students can come and go as they please. Student well-being is an important issue and, in keeping the learning process going, there have to be systematic support mechanisms, knowledge about retention rates and progression characteristics. For enhancing the quality of student learning experience the Panel recommends methods such as the following: internal accreditation for new programmes, cyclic programme evaluations, tracking alumni and early warning systems to catch possible drop outs.

The Panel observes that there seems to be an inherent culture to ask for more resources without first trying to change priorities and reallocate resources. The Panel could not determine whether the programmes had a budget or control over one, nor was it clear whether the programmes were run efficiently. The Panel recommends making the funding system transparent and sustainable. Moreover, concerning service teaching (compulsory basic studies), the Panel urges the School to set up a sustainable model for funding service teaching and developing it to suit the needs of degree programmes all over the technical Schools of Aalto.

2.4 Observations on the evaluation process and recommendations for improvement

The Panels applaud Aalto University for launching the ambitious endeavour of the Teaching and Education Evaluation. One Panel describes it as an excellent initiative for a research intensive university and evidence that the University is taking teaching and learning seriously. All the Panels express their appreciation of being invited to participate and note that it has been an interesting and rewarding experience. One Panel even asks to be invited back in three years' time to see how the development has proceeded.

However, the Panels were able to note different ambition levels and engagement from various programmes and Departments towards the TEE. Some interviewees seemed to lack understanding of the evaluation of education, the TEE process, and its goals and benefits. This kind of exercise should be taken as a serious opportunity to develop teaching and learning. The Panels appreciate that the TEE has been promoted in a short period of time and has been a challenge to carry out owing to many simultaneous other change processes. Aalto University, in its new form, was only one year old at the time of the evaluation process.

One Panel suggests that the work would have been less demanding for all involved and would thereby have shown a higher degree of efficiency if the objectives of the TEE had been more clearly stated. It turned out at times that the respondents had been generally worried about the final outcomes of the evaluation and thereby had often given answers believed to be tactically or politically correct.

The Panels congratulate everyone for the superb organization of the site visit and excellent support during the visit. The practical organization and arrangements have been exemplary and the Panels thank the organizers, including Student guides and local School co-ordinators.

The Panels comment that although they found evidence of good practice in learning and teaching, not all was uncovered. It was not possible to get a complete picture with the material provided and with limited interview sessions. However, based on what they read and observed they synthesized feedback and recommendations reports - the value of which only the degree programmes, the Schools and Aalto University can decide. The Panels realize and hope that the recipients of their reports will also understand that they have only seen a snapshot of some limited aspect of the whole education activity.

The Panels point out that their feedback and recommendations are general observations. One Panel suggests that more accurate statements could probably have been expressed if the evaluation had been focused on a more limited aspect of teaching. The present TEE took quite a wide perspective of programme planning, implementing and developing. A more restricted type of approach would have reduced the volume of text; the present evaluation produced many long, often duplicated texts, with limited precision.

The Panels felt they did not have as much time for the interviews as they would have liked. Moreover, some more time for processing observations and writing preliminary impressions would have been welcome. The Panels were not equal in terms of the number of programmes to be evaluated; given the restricted time and high number of programmes to be evaluated it was difficult to get a full understanding of each programme and assess the appropriate level. There was a comment from one Panel that

the evaluation process had been a highly qualitative exercise; however, the qualitative emphasis was not quite apparent in the instructions received before arriving. The Panel also suspects that this aspect was not clear enough for those who were participating in the self-evaluation of the programmes.

The self-evaluation reports were mostly well written, but gave a rather limited insight into the educational situation. Some Panels suggested more work on the layout of the self-evaluation reports. Some of the reports were difficult to read, became tedious and repetitive; there was a suggestion that the self-evaluation form was overly complicated with too many questions. One Panel reported that some of the material in the self-evaluation reports was only in Finnish.

The Panels would have preferred shorter self-evaluation reports and more background material such as statistics of student progress, degrees and opinions, and curricula; organizational charts would also have been welcome. Moreover, one Panel felt there was not enough background information to get a wider understanding of Finnish education, policy changes, Aalto University and School structure, and student work.

The Panellists valued the discussions with staff and students. However, some commented about the allocation of insufficient time and would have especially benefited from having more time with students in each programme. There was also criticism of mixed groups (students and teachers together) and there could have been more interviews with students only. The Panels would have benefited from more information about the interviewees, especially how they had participated in the self-evaluation stage. One Panel noted that a more narrow objective of the evaluation could also have given a better set of (and focus for) interviews, in particular if the interviewees had been more prepared for the event and had been either clearly parts of the self-evaluation or completely independent of it.

For similar evaluations in the future one Panel has suggested that the Teaching and Education Evaluation self-evaluation model could also include a strategy for teaching and learning, and that the relation to the strategy for research should be outlined.

3. Conclusions and major *development* needs

Martti Raevaara

These conclusions are arranged according to the following themes: *Students as co-creators, Curriculum reform, Pedagogical education and leadership of education, and Reflection on the TEE*. The themes provide aspects for discussion, reflection on and contemplation of action points, which will enhance learning, teaching and education at Aalto University.

The theme contents overlap and, because of this, some issues are repeatedly examined from different perspectives. At the end of each theme there are proposals for the *key action points* to promote, work forward and improve in connection with this topic. The actions are divided into *short- and long-term actions*. The timeline for short-term actions is based on the Aalto Bachelor's programme reform with the new programmes starting in 2013 and the long-term timeline extends to the year 2015. However, many actions need continuous development and monitoring as the core of the Aalto teaching and learning culture.

The evaluation emphasises the fact that *students and teachers are "owners" of learning and teaching and key actors in creating the new learning culture* and the degree programme curricula, which are based on the latest research knowledge and the future scenarios and competences of working life. The University support services and changes in organisational structures will give assistance with reforms, but these will be carried out in Schools, Departments and degree programmes by teachers and students.

Students as co-creators

A fundamental standpoint for developing learning, teaching and education is how we understand students' role in the university community. *Students are members of a university community*, not customers. One of the key objectives of degree programmes is to support a student to build and strengthen her/his *professional identity* as a novice member of the professional community. At its best, the learning community (communities) at the University, within a School, a Department, a degree programme, courses or peer groups, can provide inspiring venues for students and teachers to encourage each other's creative processes and performances, thus building the idea of a professional community that a student wants to identify with and participate in.

Consequently, it is crucial how we *welcome our first-year students*, design their orientation studies and curriculum, and organize teaching and tutoring that embody the involvement of leading professors and researchers. *The first study year will create a basis for future studies*, and the *working culture of a community will always provide*

a model for learning and working methods in the professional field, as to what is valued and what is less important.

The students have great potential expertise for reforming learning and teaching, but they have to be invited and accepted as key participants. The TEE Panels were impressed by the Aalto students' motivation, talent, openness and honesty, and encouraged them to take an active role, and, together with the teachers, to create a learning community with a passion for learning and discovery. Within the community, *students should consider themselves as active partners and co-creators* of the quality of their education and quality culture in general. This has to be taken into account when degree programmes, Departments and Schools set up various planning, steering and management groups and contemplate operational models. However, it is important to recognize that *students are neither responsible for the quality of teaching and education* nor for the implementation, success and continuity of development work and reforms.

One basis for students' involvement is a *flexible feedback system with an emphasis on* active and encouraging *interaction between students and teachers* and the documentation and use of feedback. In most cases, the feedback system is not a challenge as such; rather, the problem is in using the feedback for learning and teaching. *Feedback is a part of the learning process* and it is important to ensure that the students will also get feedback on their feedback. Giving and receiving feedback is a key element to improve quality in learning, teaching and education.

Students should challenge teachers to improve their courses and teaching methods, but ultimately *students are responsible for their own learning*, personal study plans and progress during their studies. *Students should be guided towards a strong commitment* to studying. The support of and trust in students creates responsibility, and with freedom this will then enhance independence, boldness and the student's own will, which are important for success in both studies and professional success in the future.

It follows that the *personal study planning process will involve career planning* too, scanning and understanding future professional demands and career opportunities. A curriculum structure with sufficient optional and alternative study modules linked with professor-driven tutoring of the personal study plan gives the students an important chance to build their own professional future. The process approaches learners as individuals, taking account of their particular backgrounds, experiences and former studies, perceptual frameworks and competences, learning styles and needs.

The TEE Panels encouraged the students to use the possibilities of *international exchange* and *internal Aalto mobility* and to seek *diversity* in mixed study groups with students from other programmes and especially with international students. The fact that students learn a lot from each other should be used more widely, for example by promoting student-driven projects and enterprises. In addition, a student-centred approach makes it flexible and easier to develop blended learning⁴ models and to benefit both from formal and informal learning, thus encouraging the "track of lifelong learning".

⁴ Blended learning refers to a mixing of different learning environments. It combines traditional face-to-face classroom methods with computer-mediated and often network-based activities. Blended Learning can take on many shapes or forms of activity, depending on the teachers and learners involved.

3. Conclusions and major development needs

Two Panels made a proposal for a *Students' Charter for "good student citizenship"* to formulate the rules of responsible, fair conduct and to make sure that students understand their responsibility in studying and learning. The idea is close to the "*Code of Conduct in learning and studying*" that the Student Union (AYY) has already promoted and conceived in collaboration with teachers.

The international Panels were amazed by the Finnish study culture, which takes it for granted that students can take up heavy employment beside their studies. This leads to poor credit accumulation per study year and also causes problems for courses and for the planning and implementation of degree programmes. The course requirements and workload are unrealistic if learning is based on students' studying only part time. The learning culture easily becomes less demanding and this will then affect the quality of learning. In addition, the elective study modules and flexibility in studies do not fit well with a low intensity of studying. *Successful progress during one's studies is a part of sustainable education* and essential for both students and teachers.

The Panels recognized the great work of the Student Union, Guilds and Associations and their significant partnership role at the University, but to keep this collaboration open and constructive a clear chart that explains the sharing of responsibilities with teachers and the administration is needed.

Key themes and actions to promote

Short-term

- Monitoring the accumulation of study credits, progress in studies and student retention – systematic follow-up, checkpoints and support for students, everything that fosters students' well-being.
- Focusing on the first-year students: orientation studies, teaching methods, curriculum, and learning environments.
- Tutoring students with respect to their personal study plans and career planning, taking account of international exchanges and internal mobility (crossing borders).
- Establishing a compatible course feedback system to serve students, teachers and the education leadership.
- Drawing up a Code of Conduct in learning and studying.

Long-term

- Students commit themselves to their studies (progress and credits accumulation) and bear responsibility for their own learning and personal development.
- Students participate in planning, steering and management groups.
- There is a flexible feedback system for students: feedback from degree programmes, learning environments, tutoring as well as the course feedback, and an emphasis on active and supportive interaction between students and teachers.
- Increase in the quality and extent of feedback on students' learning processes, learning outcomes and professional development, including the tracking of students and collecting more detailed information of students' overall learning experience.

Curriculum reform - rethinking learning, teaching and education

As stated previously, the students' status in the university community is strongly related to the process of professional identity building, for example, the way in which we implement a student's personal supervision, mentoring and career planning and comprehend a student's role as a member of the university community. The other aspect of identity building is the *relevance of a degree programme*, how it will reflect on appropriate competences in the future or, ultimately, *how the university prepares students for their future lives*.

With the assistance of the degree programme and in collaboration with the members of the learning community a student should learn and absorb the (presumed) competences needed in the future. The *"future oriented" degree programme curriculum is based on continuing discussion and argumentation about the core of university education*, what the necessary and appropriate study contents, the learning and teaching methods, the learning environments and the forms of the learning community are.

There is clearly a big change going on in education. Our living environment, society and work are undergoing continuous and complex changes, which *emphasize new ways of learning, creative thinking and collaborative activity*. In a media-dominated society the media are strongly interlinked with learning and teaching, and not only restricted to educational institutions. *Formal and informal learning become mixed and people use different media to share and build their competence, knowledge and skills*. The abundance of resources and relationships is made easily accessible via the Internet and is increasingly challenging for university teachers to redefine their role as educators in coaching and accreditation of prior learning. Students more easily expect to be able to learn and study whenever and wherever they want to, and *students' work is increasingly seen as collaborative by nature*. New, scholarly forms of authoring, publishing and researching continue to emerge, and digital media literacy becomes more and more a key skill in every discipline and profession. (See, for example, the annual Horizon Reports by the New Media Consortium, <http://www.nmc.org/horizon>.)

One illuminating scenario of the characteristics of changes and relevant competences at work for 2020 is presented in the profound Oivallus Report (2011). Moving towards an information society or an experiential society will emphasize more and more the *capacity to work in a new way to achieve new or improved solutions*. The frame of working is changing and is now based more on vague guidelines and goals than on strict instructions. People have to define the content and rules of their work on their own or together with others. The challenges encountered at work are often interdisciplinary by nature and successful solutions will often combine knowledge and skills in an interdisciplinary way. In order to prepare for the future, promoting *creativity understood as divergent thinking* - imagining alternative solutions to problems, *is becoming the foundation of all education*. Education that promotes creativity adopts methods from working life: experimenting with others without the fear of making a mistake will be encouraged. (Oivallus. Loppuraportti, 2011, Elinkeinoelämän keskusliitto, http://www.ek.fi/ek/fi/tutkimukset_julkaisut/2011/5_touko/Oivallus-web-v4_final.pdf)

The above scenarios will evidently challenge universities to swiftly adopt new and flexible operational models and structures of education. Examples of these are

3. Conclusions and major development needs

interdisciplinary networking, creating innovative learning and teaching communities, and adopting different ways of learning, especially integrating informal and formal learning. Moreover, *an international and multicultural approach should be the default in all university activities*. The landscape of teaching is changing and there is an actual need to rethink the curricula and teaching methods in all degree programmes. One panel briefly summarised the situation as follows: “The good old days are over – shape up”.

The mission of Aalto University sets a relevant foundation for the curriculum reform; “*the university educates the visionaries of our future society: responsible, broad-minded experts with a comprehensive understanding of multifaceted problems*”. The key principle is that the *curriculum must be based on the future scenarios and competences of working life and the latest research knowledge*, and these will then refer to the definition of learning objectives, contents and methods of the programme, and all courses too.

As the Panels’ recommended, there is a need for *optional and alternative studies* within degree programmes to ensure the *possibility of mobility, cross-disciplinary co-operation* (projects, courses, study modules) and *international exchange* in studies. Many important working-life competencies, such as sustainable development know-how, entrepreneurship capability, international orientation, life-long learning and career planning or the ability to manage innovation processes, do not get enough attention and should be a part of all programmes. The curriculum must support learning that is based on problems and phenomena. This will enable us to handle more and more complex environments.

There is a need for the *full implementation of the Bologna Declaration* with the three-cycle degree structure (Bachelor’s, Master’s and Doctoral levels). We have to define and justify what should be learned during Bachelor’s and Master’s degree studies and also what remains for continuing education. *A competence-based curriculum with an emphasis on learning outcomes and a clear Bachelor - Master distinction* will promote easily comparable degrees to support students’ international mobility and employability as well as synergies between degree programmes and the growing importance of lifelong learning. Initially, the Bologna Process focused on improving the quality of teaching and learning and should be considered as the start of a process of change.

The existing curricula are often overloaded with mandatory course contents. *The clear definition of core contents and a reasonable timeframe for learning* as well as inspiring teaching methods are essential to support meaningful learning and *to help students to progress in their studies within an ideal timeline*. In addition, there is a demand to critically re-assess the ratio of the workload to credits in many courses and degree programmes, including the balance of the workload during the academic year.

The curricula reform carries the challenge of removal: *to create something new always means that at the same time we have to give up something that exists*. This emphasises on the creative level of the curricula process. Crossing traditional borders and co-operation with widely different competences helps us to become surprised, and surprises lead to new insights.

The reform of curricula should be based on *active and open collaboration of teachers, students, university staff and key partners* such as alumni and employers. Well-functioning *feedback systems and platforms for co-operation* are needed for meaningful evaluation and participation.

An intensive curricula development is going on at the Aalto Schools at many levels, and several interesting pedagogical experiments to develop teaching methods, and students' tutoring and educational procedures are under way. Probably the most challenging is the *comprehensive reform of Bachelor programmes* with the stress on a wider programme focus, student-centred learning and flexible learning paths. This is the *core of the university reform, an improvement on the quality of teaching and education and their impact*. The challenge is not just the re-evaluation of structures, aims and contents, but also learning and teaching methods and leadership of education as well as learning environments and procedures in support services: in effect, how we can do all this even better. The Aalto attributes such as ambition, inspiration and enriching collaboration that enhances innovations are well suited as a foundation for student-centred learning and studying.

The degree programmes have a strong basis for these reforms. Many well-established evaluations and excellent development work were carried out before the TEE, and a great number of good practices were illuminated in the Panels' reports and the self-evaluations. But as one Panel expressed it with great insight, even if the programmes essentially function well in their present forms, they have to take risks, since complacency and stability do not lead to excellence. Anyway, the Aalto objective to become recognized as a *highly international and multicultural university requires new insights into educational models, learning and teaching methods and student recruitment*.

Key themes and actions to promote

Short-term

- Bachelor's programme reform: full implementation of the Bologna Process with a clear distinction between the Bachelor's and Master's degree programmes, a wider programme focus, student-centred learning and flexible learning paths, a curricula structure with optional and alternative study modules to encourage students' mobility, cross-disciplinary co-operation and international exchanges.
- Degree programme curricula based on future scenarios and competences, definition of core contents and support for the student's personal study plan and progress in studies.
- A collaborative degree programme, Department- and School-level reflection and contemplation of the Panels' School- and programme-specific feedback and recommendations, not overlooking the valuable self-evaluations.

Long-term

- The adoption of an international, multicultural approach for educational models, learning and teaching methods and student recruitment, as well as hosting international students and accepting them as a part of the university community.
- Practices and models for wide participation in the constant evaluation and reform of degree programmes (students, teachers, other staff, alumni, employers and other stakeholders).
- The use of Learning Outcomes as a tool to develop the curricula and quality of learning (see p.171 instructions included in the Panel Report of the School of Economics).

Pedagogical education and leadership of education

Excellence in both research and in education is the core of the university's success. All university functions and services have to be focused on attaining this goal. With the help of careful recruitment of professors (tenure track) and lecturers (lecturer track), focused resource allocation and an inspiring and encouraging culture for learning and teaching are the means for consistent improvement of quality.

Teaching at a university should be based on high-quality research. This traditional way to define university teaching emphasizes the role of teachers as experts of the discipline. The foundation of teaching is the most recent research knowledge and personal deep understanding of the meaning of the knowledge in the research field, and also more widely in society and our living environment. However, it is essentially important to *recognize pedagogical expertise as a part of the core substance* of professors, researchers, lecturers and all university teachers.

It is possible to learn to teach and to develop pedagogical thinking to become even better in teaching, and this does not impair one's development in content expertise. On the contrary, the foundation of one's personal development as a teacher is an awareness of the traditions, conventions and paradigms in the discipline and the field of research. The way in which a teacher educates and assumes her/his students will learn should always be reasoned, in the same way as the research knowledge of the discipline is reasoned. A discipline-based pedagogy has its history, present and future and this is linked more or less with the research substance, its practices and conceptions of knowledge and learning.

Continuous and complex changes in our living environment emphasize new ways of learning, creative thinking and collaborative activity for innovations. These also challenge universities to re-evaluate their educational models and teaching methods, but, in addition, *the traditional teacher role calls for discussion and re-definition.* An interesting association with this inevitable shift is provided by Jeremy Myerson (the director of the Helen Hamlyn Centre at the Royal College of Art), who has deduced the paradigm shifts in the designer's role from the Fifties up to the present. He states that during the Fifties the role was defined as "design for people", at the beginning of this millennium it turned more to "design with people" and now there are evident signs of a change towards "design by people". The role emphasizes designers as enablers and co-creators in the innovation process. (Myerson, Cumulus Conference Shanghai 2010.)

It is fascinating to adapt the metaphor when one thinks about the new roles of university teachers and education. Are there signs of the mindset shift from "up-down" to "bottom-up" that *teachers are now becoming increasingly co-creators of meaningful learning and educational models and enablers, who assist and activate students learning?* A student-centred approach to learning involves a different relationship between teacher and student, whereby the teacher also has the role of a facilitator, and where the responsibility for learning is shared. The students construct their own meanings by pro-active learning, discovery and reflection. The teacher enhances deeper understanding and builds critical thinking as part of the learning process. The student is involved in determining what is learned and the *focus is on outcomes, rather than inputs.*

Pedagogical education and mentoring

Pedagogical education for teachers has a high priority, as all the Panels pointed out. The Panels urged the University to use the pedagogical education in a more strategic way for everyone involved in teaching. There must be *clear incentives for teachers to view pedagogical education as a part of their personal academic career planning*. The education should be linked with the recruitment and promotion policy of academic staff.

The Panels regarded it as important that merits in teaching are equally valued as merits in research. *Developing competences in teaching must be part of the promotion system* (tenure track, lecturer track). The criteria for pedagogical competencies and education should be made more explicit. In addition, the allocation of resources to academic staff for pedagogical education and awards for improving the quality of degree programmes will promote the appreciation of teaching.

There are many good teaching practices and educational experiments in the degree programmes. The challenge is to *increase awareness of this profound development work and encourage teachers' collaboration to share experiences and co-create next practices*. In the University's service organization, the teams of the Strategic Support for Research and Education unit assist in generating platforms for co-creation and give appropriate pedagogical assistance to teachers, for instance to use blended learning/teaching for reforming education.

The support unit will arrange and develop *pedagogical education and mentoring* for and in collaboration with teachers. The emphasis is on meaningful pedagogical challenges of the teachers in different disciplines, active participation of teachers in the implementation and development of education and learning together in peer groups. The Panels also emphasized an international and multicultural approach: to educate teachers in teaching in English and in teaching in a multicultural university community, and to implement pedagogical education in English for internationally recruited teachers.

As has already been noticed in the context of students' learning, the crossing of traditional boundaries and multidisciplinary collaboration are essential to create a new learning culture. *Structures of education and learning environments should also encourage and inspire collaborative teaching with different competences* and working methods. Collaboration and diversity are powerful resources and should not be missed. Collaboration is also the key to develop appropriate support services for teachers.

The scanning report of Research on Learning and Academic Work at Aalto University (Teija Löytönen 2011, <https://blogs.aalto.fi/alarm/>) exposed a remarkable number of research projects and groups focused on core areas of learning and teaching at Aalto, such as computer-aided maths teaching, engineering education, learning and technology, teaching social competence, autonomous academic development, learning entrepreneurial and enterprising readiness, processing learning and knowledge management, professional development and learning practices within artistic work, art and learning, the philosophy of education and art, intuition in design, collective knowledge building and transformative learning, media culture and education, and new media tools in learning. A network of nearly fifty Aalto researchers has already been established. This constitutes a great foundation for the research-based development of new learning and teaching methods and pioneering education, which use the collaboration of different kinds of expertise at Aalto University.

Furthermore, we should utilize the expertise of Master's level teacher education

at the School of Art and Design with its long-standing tradition and experiment of practice-based research and development of art pedagogy and education models for teachers of art and design. Art-based, audio-visually orientated and experimental learning and teaching methods provide a potential and distinct starting point for the co-creation of innovations in pedagogy, and models of academic activities too.

Leadership of education

There is a call for *visionary leadership in degree programmes*, Departments and Schools. *Educational leadership* with strategic thinking will enhance the quality of teaching. In practice, this is not possible without a real *appreciation of teaching merits*, as well as *merits of educational innovations and leadership*, when professors, researchers and lecturers are recruited and rewarded. Moreover, the *allocation of resources for teaching and pedagogical reforms*, involving risk-taking, is fundamental to make progress effective and the leadership role sufficiently desirable.

The Panels encouraged enhancing a more *proactive and stronger pedagogical leadership* at all levels of the Aalto organization and a genuine integration of leaderships of different levels. *Educational leadership roles should be more pronounced* at all levels. A clear organizational structure and governance model with clear mandates in degree programmes will sustain success in changes and development work. There is a special need for clarifying *responsibilities, roles and resource allocation to the Heads of the Degree Programmes*.

Resource allocation

Resource allocation is always involved when one is discussing new options for leadership and degree programmes. Evidently, there are good reasons to distribute more resources to teaching and education reforms. However, one beneficial perspective of the discussion is the *sustainability of education*, for instance what the reasonable number of courses available is, the size of study groups, the intensity of studying and the progress of studies, as well as how appropriate the teaching and learning methods and course contents are, or how blended learning is used in teaching and education models. Sustainability is also related to the removal decisions in curricula reforms; creating something new also means giving up something that exists. Furthermore, the usefulness of teachers' pedagogical education can be seen from the standpoint of sustainability, as one Panel well argued: "Anyone can improve a course if it means that the teacher should work a hundred extra hours; to improve learning outcomes by reallocating the existing resources takes pedagogical know-how."

The Panels pointed out that very often there seems to be an *inherent culture to ask for more resources without first trying to change priorities and reallocate resources*. One Panel believed that the repeated mantra "We do not have resources" is misguided. This may also indicate a lack of knowledge of actual resources, their allocation and the cost factors of programmes, as well as insufficient know-how of alternative teaching and learning methods and cost-effective ways of teaching. One Panel recommends a thorough examination of the course structure and number of courses, and greater investment in a flexible learning environment that supports a variety of teaching methods. The danger is a proliferation of courses that are not connected to the intended learning outcomes of a degree programme.

The Panels stressed that *the funding system should be transparent, sustainable and output-based with incentives*. The incentives should be related to both research and teaching of a high quality. It is important to ensure that the key performance *indicators also encourage and reward active development efforts in teaching and education*.

Key actions to promote

Short-term

- Taking teaching merits and pedagogical education into account in recruitment, promoting and awarding systems. Developing methods for identifying pedagogical competences and education including clarifying the assessment criteria.
- Creating a system to allocate resources for teaching and the strategic development work of degree programmes (transparent, sustainable and output-based with incentives), and key performance indicators to encourage efforts in high-quality teaching and education.
- Giving a clear status and result allocation to the Heads of Degree Programmes.

Long-term

- Inspiring, innovative pedagogical education and mentoring for teachers and with teachers: based on meaningful pedagogical challenges, peer group learning and teachers' active participation in implementing and developing education. Moreover, there is an increasing demand for training in teaching in English and in the multicultural university community. Furthermore, to implement pedagogical education in English.
- Using models and methods to share best practices and co-create next practices, with appropriate support for pedagogical development work by teachers.
- Using proactive, strong strategic leadership of education with a clear organizational structure and governance model.

Reflection on the TEE

Aalto University has an ambitious goal to make a remarkable quality step forward in research and education within ten years. Ongoing and coherent *evaluation and monitor of the progress and impacts in teaching and education* are important elements of the goal-orientated development process. The core goals of evaluation are to *make the progress visible* (e.g. to strengthen motivation and to help revise means and goals if necessary) and to *improve the quality of learning*. The evaluation enhances reflection on experiences, results and activities that make meaningful learning take place.

The TEE will be a foundation for ongoing and various evaluations procedures. The University has set *key performance indicators (KPIs) for education* to follow how the implementation of the Aalto strategy proceeds. The KPIs for education focus on teaching quality, student performance, multidisciplinary studies and alumni and employment satisfaction. These indicators will be implemented with the help of an *extensive evaluation regime* including tools as a systematic course feedback of students and teachers and a monitor of the accumulation of study credits, international study components and multidisciplinary studies in the degree programmes.

The *entire evaluation of teaching and education (TEE)* will be implemented periodically, but there will also be *School-specific, long-term visiting boards* to

3. Conclusions and major development needs

collaborate with Schools on the permanent evaluation of research and education. The general *focus of future evaluations will be on the implementation of the Aalto strategy*, to observe how well teaching and education promote the University's strategic goals. Furthermore, there is a need for the evaluative monitoring of separate development processes such as the Bachelor's programme reform and the innovative design of appropriate evaluation methods for specific purposes.

The evaluation of learning, teaching and education is always a complex and multidimensional mission, which calls for different standpoints and methods to collect information, analyse materials and interpret results. The evaluation is very much a qualitative exercise and based on a qualitative methodology. Consequently, we may justifiably remind ourselves that even the comprehensive *TEE Panel evaluations are "limited"* interpretations about the strengths and weaknesses of the degree programmes, *not the whole truth*. The interpretations have been made in the context of the TEE and founded on the self-evaluation reports by the Schools and programmes and the Panels' interviews during the site visit week. And it is important to keep in mind that the TEE covered the time period before Aalto University.

Moreover, *the TEE is not the zero-point of improvements in teaching and education* at Aalto. Much excellent development work and many evaluations had been completed before the TEE and a great number of good practices were pointed out in the Panels' reports too. The *profound preparation documents by the Aalto transformation and implementation teams* (A8 and its numerous subgroups) and the extensive planning process based on broad participation and collaboration built the foundation for ongoing reforms and a great potential resource to utilize in the future too. The above does not make the Panels' feedback and recommendations less valuable, but does emphasize a sensitive and deep analysis of the preferred actions in relation with the self-evaluation reports, as well as regular internal and external evaluations in the future.

Besides the obvious results, recommendations and conclusions based on the Panel reports, it is important to *understand the TEE process as a result too*. For its part, the process, embodying collaborative self-evaluation and reflection on the results, built the new Aalto feedback and evaluation culture, which highlights open discussion and a positive approach to the continuous evaluation of learning, teaching and degree programmes, as well as all operational activities. The *goal of the TEE is to support the development process*, not to rank degree programmes.

Interpreting a laborious and complex teaching and education evaluation exercise such as the TEE will create the need for the *assessment of the evaluation itself*. The fundamental criteria can be summarized in the following three issues:

Meaningful focus and targets: Are the targets meaningful with respect to the phenomena which enhance learning?

Reliable methods: Are the methods reasonable and reliable to evaluate these targets? How can one collect vital information, find and apply reasonable methods for analysis and make reasoned, meaningful interpretations of the results?

Benefit: How useful is the evaluation in terms of flexibility, ease and efficiency of performance? Too often a massive evaluation project leads to results and conclusions which are poorly used and monitored; all the energy has been used for the process itself or just to collect the inquiry material. *Innovative design and the use of appropriate evaluation methods is a pivotal part of reforming and developing teaching and education* - as we perceive the significance of evaluation methods for the deep learning of students.

The above criteria argue well for the active role of students and teachers in the planning and implementing of an evaluation process as well as in the reflection on results. *Students and teachers are “owners” of learning and teaching, and key actors in the authentic evaluation of education.* The point is to design an approach to evaluation that is most relevant to what matters in education. Without functional evaluation there is no good way to understand the relationship between doing something and the consequences, and it definitely becomes difficult to develop better courses and teaching.

The objective, implementation and impact of the TEE can be arranged according to three perspectives: *development-oriented evaluation, strategic steering and boosting the prestige of teaching.* This will give an operational structure for future steps. The TEE results, including the self-evaluations, give us a great opportunity to enhance a co-creative development process for excellence in learning, teaching and education. The values of Aalto University – a passion for exploring boundaries, freedom for creativity and critical thinking, the courage to influence and excel as well as a responsibility to care, accept and inspire, and all these promoted values founded on high ethics, openness and equality – well illuminate the new learning and working culture of the university, where research, education and artistic activities are developed together in an enriching dialogue. The University is based on principles of constant reinvention and the bold crossing of boundaries to create new innovations. Now is the TEE time – *the momentum to use the TEE results together for pioneering education.*

Key themes and actions to promote

Short-term

- The development of systematic evaluation methods and a regime for KPIs in education (teaching quality, student performance, multidisciplinary studies, alumni and employment satisfaction).
- School-specific long-term visiting boards to collaborate on the permanent evaluation of research and education, and create the concept for the evaluation of teaching and education (working models, guidelines etc.)

Long-term

- Innovative design and the use of appropriate evaluation methods as a part of reforming and developing teaching and education: emphasis on students' and teachers' roles as key actors in authentic evaluation (“owners” of learning and teaching).
- All reforms and development projects include the monitoring and evaluation of impacts (to make progress visible and enhance the quality of learning).
- Planning of the next comprehensive evaluation of teaching and education (TEE 2015).

Appendices A:

Feedback and recommendations from the External Panels

Appendix A1

The School of Art and Design

MA Applied Art & Design, Interior Architecture & Furniture Design, Textile Art & Design, Fashion and Clothing Design and Industrial & Strategic Design

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel was pleased to receive and read individual programme SER's (Self-Evaluation Reports) and recognizes the complementarities of the units (programmes) that constitute the Department of Design.

We have discovered several good practices that could benefit the School of Art and Design as a whole, and in light of these commonalities, shared views and ethos of the programmes, the Panel prepared an overall report to ensure that the outcome will benefit all, whilst acknowledging the specific nature of the disciplines.

The interviewees were asked to define their own strengths and weaknesses.

Strengths:

- There is a common course (30–40 ECTS), as part of the shared study programme.
- It is very good training for service designers.
- We are working on more focus for the course, we are in the middle of a shift in programme design.
- There is close co-operation between Fashion and Textile with shared study modules.
- The structure of the programme is such that the project assignments encourage time and freedom to influence individual study profiles.
- We see lots of potential for positive changes for the future within Aalto and in the industry/profession.
- There are eight (8) clear competence areas that give a strong direction for teaching in the first year; students are engaged in all the relevant topics.
- The furniture design programme is small and flexible.
- We focus very much on a variety of disciplines and backgrounds to supplement the continuing TAIK BA students.

Weaknesses:

- Spatial Design, textiles and fashion share the idea that they are too small to respond adequately to the broad professional requirements of their disciplines.
- Applied Arts has started to change but has not finished developing from the previous, purely material-based platform.

Since Aalto is at the dawn of a new area, the Panel asked to know what the Departments dreamt of having, concerning the new opportunities within this new university:

- That the new Aalto University will lead in real, meaningful change.
- That there will be room to focus on new materials and process development (e.g. working with interactive textiles/smart fabrics/industrial design/service design).
- That there will be an opportunity to really restructure the courses, possibly merging programmes with the implication of a re-definition of modules.
- That exciting opportunities will exist with the Department of Architecture joining the School.
- That there will be integration and more connection between artistic practice and theory, and research will become systematically embedded in programmes.

The Panel would like to emphasize the strengths of the Design Department (both BA and MA) in the following:

- A shared manifesto which informs the vision the values and the strategic planning of the constituent programmes.
- A willingness and openness to co-operate, evidenced by joint project-working, courses, entry examination assessments and sharing of teaching methods.
- A clear and appropriate sense of benchmarking and therefore of being articulate in defining internationality outside Finnish/Nordic culture.
- The fact that the programmes are taking joint responsibility to redress the balance between core subject/studies and electives in response to the previous process of defragmentation.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Quality in general: good.

Industrial design students make weekly learning reports which include high levels of self-reflection.

There is an appropriate blend of oral, written and self-evaluated feedback.

In selecting their students (who are not continuing from the TAIK BA) the programmes look for the following attributes:

- Good to excellent level in artistic skills and sensibility
- Wider range of talent (students with a different BA background or polytechnic degree)
- Textile art and design does not necessarily require a BA in textile design as a prerequisite for entry to the MA
- Readiness to work independently
- Students from different cultural backgrounds
- Conceptual and strategic interests
- An individual voice
- Artistic ambition should be high
- Potentiality.

The Panel was impressed by the number and quality of external (including international) applicants and intake and the collaborative cross disciplinary entrance assessment.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- The HOPS arrangement enables a very individual approach to students learning and should be extended to include career planning.
- The learning process is very individually targeted.
- There was a discussion on learning outcomes which focused on the fact that they should be clearly articulated and aligned with assessment criteria in the assignment given to the students.
- Each module should have its own set of assessment criteria, linked to the specified learning outcomes.
- The weekly learning reports (see the BA report as well) in Industrial Design improves tracking of the development in students' learning and should be emulated across the Department.
- Theory is blended into the project assignments rather than as a freestanding course.
- Different research methodologies are embedded in various thematic modules; some are particularly research driven where appropriate to specific assignments.

c. Degree programme evaluation and development (questions 17-22)

- The doctoral committee should be able to focus on implementing research into teaching at all levels (PhD, MA and BA) but staff appear to be swamped by administration.
- Staff are very open and keen to take advantage of the availability of pedagogical training provided by Aalto.
- Previous quality work ISO 9001 in the Fashion and Textile area has impacted on the other courses in the Department as shared good practice.
- Good use of benchmarking on an institutional, an international and, in some cases, even a modular level.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- See under 1 and 2
- Participation by teaching staff in the entrance assessments of other programmes.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Feedback to students both orally and written are in place. This is a good example for the BA to follow.
- There is a positive tendency towards cross-disciplinarity by the sharing of teachers in various courses and individual projects.

c. In degree programme evaluation and development (questions 17-22)

A high level of aspiration demonstrated by the impressive list of prestigious international institutions, for example:

- Applied Arts and Design is benchmarking with a lot of other courses worldwide (Staff membership on international committees, subject panels and boards etc. as well as with other Scandinavian Schools, the RCA, London, and prestigious institutions in China and Japan.
- Fashion: the RCA, St. Martin's and collaboration with Donghua in Shanghai.
- Textiles: Eindhoven, the RCA, Tama in Japan and Borås (Swedish School of Textiles).
- Spatial Design: Scandinavian institutes, Konstfack, Holmen in Copenhagen, the RCA and the AA in London and with institutions in Japan.
- Industrial design benchmarks at a module level instead of the whole programme: Central St. Martin's, London, and the RMIT in Australia.

The Design Department demonstrated good use of stakeholder feedback such as from industry, visiting professors and alumni. These stakeholders are regularly invited to critiques and as contributors to project based assignments.

4. Recommendations for improvement

- Systematic feedback procedures should be developed further and put into practice.
- The Department of Design is invited to develop a format for a project or assignments brief with detailed learning outcomes (matched to assessment criteria, at both BA and MA levels).
- To better prepare students for professional life, self-evaluation and self-reflection should be incorporated systematically into the assessment procedure. This will enhance learning outcomes and monitor progress.
- The Department of Design should take a driver's seat in the exciting future of the Aalto merger – in other words, should adopt a proactive role with respect to helping to define the future for the School within the University.
- It is important that the Department starts organizing and capitalising on the potential and willingness of its impressive alumni community.
- We recommend early communication and implementation of future evaluation exercises that will help to improve the present courses. This Department recognized the value of using this evaluation to start the debate.

Art Education and ePedagogy

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The focus of the future competencies of the Art Education Programme forms a continuous dialogue within society, which enables the programme to react to the changes of the school system and the phenomena of contemporary and interdisciplinary art and visual culture. The programme gives the student a broad education that enables him or her to work in various pedagogical areas. It also offers areas of specialization as well as courses in English (40 ECTS). The programme educates students from various backgrounds. The programme has previously received feedback that reported that it lacked focus. The teachers are now working to further develop and enhance the following areas: cross-artistic education, media-pedagogy and visual culture, international and cross-cultural art education. They have succeeded in connecting research and artistic activity within teaching practice. The staff have good pedagogical competence and are interested in research work. The programme develops competencies for students to continue their studies to PhD level. After graduating, students are employed in various pedagogical areas.

The ePedagogy programme is shared between two universities, and has many international students. One strength of the programme is a sound and cohesive interplay of online course development. The programme has a strong connection to research and it encourages students to widen their interests into new areas. The students are encouraged to employ different learning methods: individual study plan arrangements – e-portfolio-group blog, wiki – counselling on minor course selection – MA thesis guidance – placement and professional discussion. The programme has highly motivated and committed students and an almost non-existent dropout rate. 100% of the students are employed in the international job market and are also potential PhD candidates.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Both programmes have gone through big changes in organization: the structure has changed from an independent Department of Art Education into two programmes of Art Education and ePedagogy located inside the Department of Art. The new Aalto organizational structure has radically changed the procedures for decision making. Adopting the new model and creating new practices has involved a lengthy learning process. Within the new situation the teachers have not always known what is expected of them. On the other hand, students feel that they do have good opportunities to affect the content of the programme. The human resource shortage affects the planning and

administration at the same time as the programmes undergo change.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Pedagogical thinking is based on the following main areas: art, education, practice and theory. These four areas always overlap and support each other. Teachers' pedagogical thinking is based on a constructivist learning approach and on critical thinking. They use many different teaching approaches. The programmes use various excellent methods in support of learning and providing feedback, such as personal discussions, group discussions, art critique sessions, project documentation, media-rich presentations, self-evaluation, peer feedback, written feedback, grading etc. The most usual way of giving feedback is integrating it with the learning process. The amanuenses retain the written feedback forms so that they are available when needed. There is a danger that the lack of human resources is creating a situation where the teachers do not have enough time for efficient support and feedback. The student–teacher ratio appears to be very poor, especially in the Art Education programme. Because of this, teachers also fail to find enough time to do their own research, which is crucial in underpinning the quality of teaching. The teaching methods and pedagogical approaches are well thought out and appropriate to the aims and contents of the programmes.

c. Degree programme evaluation and development (questions 17-22)

In the Art Education programme the student feedback is collected on a regular basis from each course and also concerns general issues. It is often difficult to obtain feedback from students. The WebOodi has been developed so that the teachers can read students' feedback. Student feedback is also discussed during the courses and internal programme meetings together with both faculty and students. The feedback is also collected from stakeholders, but getting real value out of it has been considered problematic.

In the ePedagogy programme, student feedback is collected through three systems: an online survey, questionnaires, recorded discussions and feedback sessions at the international seminars. Alumni, employers and stakeholders are also part of the online community. Feedback is discussed in various forums.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

In the ePedagogy programme, students monitor their own competencies via e-portfolios as a tool for learning and reflection.

The Art Education programme arranges an annual half-day seminar where international exchange students present information about their own institutions and Finnish students share their exchange experiences. This seems to be a successful form for the students to learn about available opportunities of exchange.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

In the Art Education BA thesis, seminars are integrated with a research methodology course and two courses of basic studies: mother tongue studies and information skills.

The purpose is that basic study courses will then have a close connection with other studies.

In the Art Education programme the course in Environmental Education utilizes and combines different teaching methods and pedagogical solutions in a very innovative manner.

In ePedagogy the didactical design contains cross-references to a problem-based learning setting with themed discussion boards, online resources, tele-lectures, as well as synchronous and asynchronous communication. A collaborative learning objective is the result of a collaborative knowledge building process in a wiki that includes key information written by the discussion attendees. The programme uses information to ease decision making and to familiarize new students with previous working methodologies.

c. In degree programme evaluation and development (questions 17-22)

In both programmes feedback, assessment and evaluation are an integral part of learning and a wide variety of methods are used.

In Art Education a curricula planning group organises the curriculum for the academic year by reviewing the current years courses and their evaluations, study modules and course lecturing schedule. The planning group analyses the facts and statistics of each course. The group decides about delaying those courses which are not fulfilling the attendance criteria or not complying in other ways, as well as starting new courses proposed by the teachers.

4. Recommendations for improvement

In the Panel discussion, Art Education interviewees did not consider that exchange studies should prolong the study period. However, in the self-evaluation material it was said that the current BA structure did not encourage a student to take exchange studies and minor studies, even though these are recommended for students in the study requirements. Therefore, it is recommended that participation in international programmes should be incorporated into the Aalto programme of study. Also, there should be more flexible ways of accepting courses completed in other universities as part of the major studies. Finally, agreements/a Memorandum of Understanding between universities would be helpful in accepting the process.

In the Art Education programme, the curriculum and the budget planning, and the variety of different pedagogical practices and approaches bring challenges for managing and controlling budgets and schedules. The student–teacher ratio is not good compared with the other programmes. Professors, especially, are lacking. There are about 300 students and one professor who is working full time in the programme. The other three professors have other duties in the University (Vice President of Aalto, and Head of the Department of Art, and Head of the Department’s doctoral studies), which take up most of their work time. Therefore, it is recommended that either the programme requires additional staff or the workload should be organised in new ways so that the programme does not have so many responsibilities and ideas for new developments.

In the Art Education programme, it takes students from six to eight years to complete the BA+MA degree (depending on how much work they have to do for a living or how

many extra courses they take). Therefore, it is recommended that the programme should be developed so that the student can graduate in five years. This could be done by evaluating the workload of the requirements and by offering courses throughout the year, especially in summer.

In the ePedagogy MA programme, students do finish their studies in two to five years, depending on how much they work to make a living. In the ePedagogy programme it did not seem in to be a problem that students studied at different speeds. However, it would be easier, at least for planning and management, if the study times of both programmes were more even.

Creative Business Management and Visual Culture MA

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

These programmes are based in Pori, as part of a university consortium from five different universities. The basic goal of the programme is 'to look at things in context – visual culture in context'. The staff are particularly pleased at the way the programme combines theory and practice, and uses the local Pori region as a laboratory. The size of the city, 75,000 people, makes collaboration with other colleagues easier than it might otherwise be if located in Helsinki. These collaborators however do not help inform the curriculum, but rather are the source of projects for the students. Examples include the following: 1) students work in an urban space, e.g. to see how urban space is constructed and who controls it, and to then develop interventions which can impact on the city, or 2) analysing media and gender, and then giving a performance to show how women are portrayed in the media.

The staff work really well as a team in planning and also in teaching. They are very interested in teaching and about students learning. The staff have a positive and energetic attitude towards their work.

The programme aims to be reflective, and research-oriented, and to use experimental teaching with fresh attitudes and good spirits. Multiple teaching methods are in use.

Students get very personal guidance.

The self-evaluation form has undoubtedly provided a good opportunity for the team to review their practices. It would benefit, however, from fuller responses, and from evidence to support the high mark of 4 given to many of the issues.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Emerging – There is a school procedure, but it is not clear that there is a regular programme committee which meets to strategically plan the curriculum and to take account of student feedback, etc. and to review/improve the programme accordingly. The process seems to be fairly informal, and staff feel confident that because they are working in the field they know what is happening.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Learning outcomes are identified for the students, and teaching is divided (roughly) as follows: approx. 1/3 lecture, 1/3 workshop, 1/3 projects. Students are encouraged to use wikis, moodle, web-learning, web-logs, and assessment might take the form of essays or

learning diaries. Grades are usually used, except for art – where assessment is reflected only in feedback (and pass and fail).

Research is primarily considered in the context of projects, as distinct from more scholarly work. It would be 'nice to have' more time for research; it is not seen as a critical part of the programme or staff activity. At the same time, four members of the staff have a PhD, and the team have recently begun recruiting and supervising PhD students. This raises questions about the presence of a quality environment for doctoral training, which includes a critical mass of research active staff and a healthy cohort of research students.

It is considered most important to have subject competence. Pedagogical training is important but given competing demands on time and competences, this takes a back-seat.

c. Degree programme evaluation and development (questions 17-22)

The programme collects feedback in many different ways but it seems that there is no systematic approach to either collect or use it. The staff consider that one good way to get feedback from teaching is to listen to students. They tell the staff about their experiences and evaluate teaching. It is done orally. The staff also consider that they see what is happening on courses and they can evaluate the findings in teacher meetings. They have yearly feedback meetings where they evaluate the teaching of the previous year. The yearly feedback is collected from e-mail inquiries. Graduating students also give feedback from the whole programme. They continue developing ways of getting and giving feedback, and special attention is paid to finding new ways to use stakeholders' feedback.

The full-time teachers have completed pedagogical studies of 15–60 units, so pedagogical competence is relatively high. They are interested in doing more pedagogical studies but there is a shortage of time.

It seems that they have not yet used research on learning and educational development to develop their teaching. They explain that the shortage of time is the biggest barrier to using research in developing the programme.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- The programme has day retreats for teachers where all important strategic questions are discussed.
- The teachers create joint projects with students, very often collaborating with some local actors.
- Students are encouraged to share their own projects and learn to discuss and reflect work in a community.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- HOPS are created for every student during the first semester. It is renewed every year and even more often if needed. Every student has a customized study plan.
- There are courses where two staff members teach together in a form of “dialogical teaching”.

c. In degree programme evaluation and development (questions 17-22)

- They try to understand and reflect on what the other teachers think, and on their teaching methods. By trying to understand each other's work better they can develop their own work as well as the entire programme.
- The introductory course introduces all the teachers and the areas of their interests. Everyone teaches for a day and this gives an idea of teachers' individual approaches to teaching.

4. Recommendations for improvement

- Whilst the programme team is very dedicated, more attention could be given to programme planning and management. The process by which the curriculum is developed, and students are evaluated and tracked over the length of the programme, requires attention. Many of the benefits of being a small team with approx. 30 students can also be a disadvantage; in other words, while there is a 'school procedure' with respect to programme development, the process seems fairly informal and was described as 'fairly fluid', and student feedback occurs frequently because of regular encounters with students. This is probably natural given the intimate environment, but there is a need to embed these processes in a more rigorous quality assurance process.
- Questions arise as to the programme's suitability for the student cohort. In other words, the thirty students (twenty on the MA Visual Culture and ten on MA Business Management) are primarily mature students, many of whom are employed. However, the programme is offered as full-time education, which probably accounts for the fact that of the Visual Culture students, only twelve graduate within the specified two years – which represents a 60% graduation rate. Either the programme should be redesigned as a part-time programme, or the curriculum should be revised – or both, but the aim should be to ensure that students can graduate within two years rather than the general trend of 2.5 years.
- The programme is small and teachers and students work closely together. It is a strength but it can also be a weakness if teachers and students work too closely together. It might have an effect on the teacher's ability to consider all students equal. The shy and quiet ones might get too little attention and feedback.
- The staff should start analyzing the teaching processes and learning outcomes to further develop the programmes.
- More attention should be given to programme planning and management, with regular programme committee meetings. The programme committee should include all the academic staff and student representation. Given the professional focus of the programme, inclusion of stakeholder representation should also be considered.
- The programme committee/department should develop a full profile of their students, including progression, graduation rates, employability, etc. and should track student progress through the programme and after graduation. This information should be used to inform the curriculum, with consideration being given to revising the programme and curriculum to meet the needs of the students who are primarily mature students in employment. The aim should be to ensure that students graduate within a two-year year timeframe rather than the general trend of 2.5 years.

- Student feedback as part of continuous improvement should be embedded as part of a rigorous quality assurance process.
- Pedagogical training needs to be adopted as an essential part of recruitment and staff development.

Design for Theatre, Film and Television BA+MA

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

- The Department offers degree programmes in three areas: Production Design, Scenography, Costume Design.
- There are a very small number of students in all of the disciplines – the job market in Finland does not offer more opportunities.
- There are some issues regarding the organization in the Department – processes are duplicated, and they overlap, and there is a lack of co-ordination and strategic thinking.
- There are some specific challenges regarding the weekly schedules: Students specializing in theatre attend classes at the Theatre Academy, students focusing on film attend classes in the Film programme.
- Students transfer from the BA to the MA programmes almost automatically.
- Each programme within the Department operates independently – the present situation lacks coordination and is rather chaotic.
- The theatre specialization feels like a small fraction of theatre within the Art School.
- Stage design is located within film design – is this an opportunity or a threat?
- Individual disciplines tend to see themselves as separate and distinctive fields of study – rather than seeing opportunities of cross-disciplinarity – or to recognize the changes in the real world of work.
- Research is closely related to teaching and creative activities, e.g. through internships.
- The learning process is marked with personal experiences, creative observations, experimental work, and conceptualization and analytical discussions. Studies based on knowledge and skills, such as history-related subjects, support this development.

Strengths:

- Collaboration within TAIK, and also with the Theatre Academy and the Sibelius Academy – with polytechnics and other Schools in Finland;
- Dynamic links between theoretical and practical aspects;
- Basic studies during the first and part of the second year.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The independence of each programme is an important part of their identity but more co-ordination would make it more efficient.

- The admission process is very demanding; only a small number of applicants enter the programme.
- Students who are admitted to the programme never fail.
- Fluid transition between BA and MA is the MA programme.
- Art is not so special..., and problems/issues are very similar across the School.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- The teaching method is based on the teachers' experience and also of the students experience.
- The learning process is based on projects, not problems.
- For students, productions are the most important part of the overall experience.
- Taking part in the pedagogical training being offered by TAIK does not seem to be directly relevant to the particular needs of those teachers.
- "Learning by doing" is not always the ideal pedagogical method.
- Mobility – there should be at least one opportunity for educational training/Erasmus or for the work-place.

c. Degree programme evaluation and development (questions 17-22)

- Clear and objective criteria that are distinct from the professors' personal opinions need to be established.
- The performance is not graded because it could be a good learning experience but still a poor performance.
- Grading and evaluation could be more structured and better organized.
- Students should not be obliged to ask for evaluation of their work.
- Giving a student feedback depends mainly on the individual teacher and the student, and is not systematic.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Close co-operation between the School of Art and Design and the Theatre Academy is very important.
- Learning agreements work for students who go abroad for a semester. Credits are accepted and going abroad does not actually extend the study period.
- There are relatively high numbers of applicants from outside the country.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- The degree includes at least 20 credits for optional or international studies; credits received elsewhere are accepted.
- There is a logical and structural opportunity to create one's own "path" with optional and minor studies.
- Optional studies are clearly described with their objectives and contents outlined (especially in the MA studies).

c. In degree programme evaluation and development (questions 17-22)

- "It is possible to teach art" – this is a very strong and positive statement.
- It is important to keep good contact with the contemporary professional field.
- Informal meetings (like the soup lunches in Production Design for Film and Television) are valuable – and efficient – opportunities for teachers and students to discuss things.

4. Recommendations for improvement

- The programme should co-operate more at both the School and University of Aalto levels.
- The Department's discourse seems to be unnecessarily self-protective; might there be some identity issues?
- Students graduate after six to eight years on average – they work during their studies and are not motivated to complete their degree. They return to the School later to obtain the degree (after they discover certain rules of the job market).
- Students should understand better how the university system works, and what opportunities they have. They should obtain written guidelines about how to progress through the School.
- The Department might focus on assessment, quality measurement, and benchmarking.
- The Department should analyse the core values in each specialization – and then create efficient connections among them.
- If there are to be fewer jobs for more graduates in the future, the Department should start brainstorming about how to change the situation, how to enhance internationalization – and possibly how to adjust the curriculum.
- Multi-disciplinarity (cross-disciplinarity) is probably the most effective way in which to prepare future graduates for various job opportunities, especially with new media.
- Students who are educated in highly specialized artistic skills usually have fewer opportunities in the job market; they should rather be versatile.
- The Department and the curricula are fragmented and there is not enough team work.
- The Department should devise exercises which illustrate/demonstrate essential skills.
- Students might need more intense and structured contact with professional theatres.
- The Head of the Department is "responsible for all" – more co-ordination might result in greater efficiency.
- TAIK should establish a systematic QA system – this Department needs this.
- In research, PhD studies and experimental productions, the Department has the potential to broaden the field in which it operates.
- Students are treated differently in different parts of the School and have no common experience – this should be changed.
- Strategic thinking should be enhanced – co-ordination should be proactive, and should not only happen when it is required.

Environmental Art

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

- The unconventional use of outdoor projects, not using traditional galleries, and mostly 'legal intervention' in different public or semi-private spaces is a strength of this programme.
- This programme helps students face the many and varied areas of society that employ the language of art; graduating students are confident enough to engage with society.
- The Environmental Art programme is quite small. There were thirty applicants last year and only fifteen student applicants this year, of whom seven were accepted. In total, there are twenty active students in the MA programme. There is a close relationship between the students, feedback is given right away, and there are meetings at least once a week with the professor – an appropriate, flexible system with so few students in the group.
- Environmental Art is directed towards society. Input is provided by a wide variety of collaborators: a sociologist, politicians and local community stakeholders. The programme takes in different kinds of teachers according to the topical subject in question and the students have to do theoretical research and make practical productions.
- Research is integral to every workshop, and across the entire programme. Sometimes this results in too little time for practical work. Courses demand research skills in the analysis of the different locations including site-specific history, communication infrastructure, aesthetics and stakeholder/user interface.

Weaknesses:

- The staff have to raise money for the programme (One professor and one secretary are paid for and other teachers have to be paid from earned income or sponsorship.)
- Students should have their own studios; they have none in the Institute.
- The academic staff appear to be making all of the academic decisions and to be deciding programme issues as well as financial matters.
- As this is a very small programme, communication should be easy, but it does not seem to happen, as the academics are very independent individuals.
- How does the teaching profit from research? This was not answered or documented but should be enhanced.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- The components of the programme are not working together very much even though they have a lot in common.
- Students come from all over the world. (40% are Finns and the rest are from abroad.)
- European students come from art backgrounds and there is a variety of different nationalities in the programme. There are students from Africa and there are Asian students, who are hard-working but want private, individual talks every week. One advantage of this programme is the flexibility that comes from such a small, close-knit group.
- The Aalto Architecture Department and TAIK share courses although the collaboration arrangements were not clearly articulated.
- The programme is managed by the various academics, who do not appear to collaborate very well; thus, a structured overall plan is missing as well as a debate about the function of art.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- Teaching is always related to the nature of the course.
- Similar courses are not easily found since the placement of this course and its relation to society makes it difficult to find benchmarking institutions. They have looked at similar programmes in the USA and in Berlin.
- Courses are directed to a specific site and aim to solve a problem for that location so the teaching is, invariably, related to the proposed site-specific project. (There are usually questions about ethical, aesthetical and ecological issues.)
- Input from the professor of the topic takes the form of an ongoing critique and the final work also includes a reflective essay, but the programme suffers from a lack of co-ordination with basic studies supporting learning.
- Evaluation is always conducted by two external evaluators.

c. Degree programme evaluation and development (questions 17-22)

- The objective of collecting student feedback is to develop the teaching methods, often through personal conversations.
- Programme development occurs through the feedback from visiting teachers from different areas, including architects and urban designers and planners that the programme interacts with.
- The study mode appears to be based on the 'apprentice' model; usually the professor sees what the students do through the presentation of their work and reflects on the work of the students. Students usually work on a big group exposition, or work on their individual, topical pieces.
- Group discussion around the artworks presented is the usual conduit for ensuring the connection between some, often vaguely defined learning outcomes!
- Staff keep up to date with the students' careers after the students graduate, as this is a very important way to measure success in this programme. Does this appear to be the only measure?
- Staff keep records of the changing theses according to shifts in society so that their

students are ready to participate in future collaboration with institutions and other partners.

- Evaluation of the programme is primarily by means of anonymous feedback.
- Of the personal feedback after a course, 50% get an occasional personal discussion and only 50% get an occasional group feedback discussion. 50 % never or seldom receive feedback.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Environmental art is directed towards society; contributors from a wide range of specialists (including sociologists, political scientists and stakeholders from the community) come in to give input.
- The staff can invite different kinds of dedicated teachers according to the theme of the project.
- The students have to combine theoretical research with their practice-based assignments.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- The goals of the basic studies must be more explicit to help the learning process.
- There are discussions among peers to ensure the relevance of the topics and there is also guidance from the external teachers/collaborators involved as well as feedback from the public that might share the experience of the projects, but there are no formal feedback procedures in place.
- It is up to the students to find their own way to complete their studies 'no teaching as such'. Rather, learning by doing is central.

c. In degree programme evaluation and development (questions 17-22)

- The external partners give written feedback.
- If the students are going to give responses to the society that the professors are focused on, there should be far more student involvement in the planning of the programme.
- It must be a formalised part of the study for students to contribute to discussions in the group and to be able to reflect on the projects both verbally and in writing to obtain realistic feedback.

4. Recommendations for improvement

- More staff are needed, perhaps part-time, as the research elements linked to teaching need to be enhanced.
- Planning of the Environmental Art programme is completely separate from the Fine Art programme.
- There are interesting planning procedures in relation to the often interesting single projects but an overall course planning system seems to be missing.

- Much independent work leads to creative cohesion but this also presents difficulties for some of the foreign students who are used to more personal guidance - perhaps it would help to write down the ideology of creative working processes and assessment criteria.
- The programme has to focus more on the emerging ICT possibilities. The students make websites and digital portfolios but to use different kinds of pervasive computing in collaboration with other programmes could be fruitful and challenging.
- The pedagogical development of the staff also needs to be focused upon as Art Education is sometimes connected via different courses, there should be an opportunity to reflect on the subject and the way in which it is taught. What are the didactic approaches in the art studies?
- It could be of some interest to develop the emerging museum didactics so that they are directed toward different groups of people. Here, there is possible co-operation between art education and the art programme.
- The new research in cognitive sciences, neuroscience and the important role of visual design and visualizations according to developing new learning methods would also be an interesting area to work in together with other programmes – eventually the visual culture subject area could also profit from this potential collaboration.

Film and Television BA+MA

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Strengths and Weaknesses:

- The staff–student ratio is reflected by the faculties as both a strength and a weakness.
- The programme is highly selective and aimed at individuals making auteur-based film.
- The graduates should be independent and creative film-makers who have enough power to improve the film industry and make new rules for it.
- The very small numbers of students create an intimate atmosphere in the Department.
- Students stay usually much longer than is required for the programme – previously there were no limits to the length of stay.
- Students have very good access to the industry and those in the MA programme, especially, work in the industry before graduation.
- Since students are often involved in the industry, they postpone their graduation because the award of a degree does not help them to get into production employment.
- The transition from School to professional life is smooth.
- The Department has good co-operation with the Theatre Academy, the actors' union and other professional bodies.
- Since the film industry in Finland is very small, the Department does not want to accept more students than it does at present.
- The teaching language for the BA programme is Finnish, but in the MA programme only some courses are held in English.
- The Department sees itself within the framework of the Nordic film schools.
- Students have very limited access to the facilities and equipment.
- Closeness to the film industry is rather a weakness, because the students' vision is rather limited. (They are prepared for a professional career in traditional film production.)
- The faculty do not have sufficient space for their work in the Department.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- The degree programme co-ordinator does not have enough authority to fulfil the expectations of the job: he/she should carry responsibility for all aspects of the curriculum (academic, creative and research).
- Since this programme has almost a monopoly in Finnish film education, almost all

the BA graduates enter the MA programme. Only a few MA students come from outside TAIK.

- The MA is a continuous programme, but this should not mean that almost all the BA graduates automatically continue on to the MA programme.
- Approximately 100% of the students in the BA and 60% in the MA programmes actually graduate.
- The portfolio of practical assignments is so broad that students finish the BA programme in three, four or even five years and the MA programme as a top-up takes from six to eight years.
- The Department considers that the extended study time is a positive idea.
- The effort to create national and international mobility might be stronger and taken into consideration when the curriculum is being updated.
- So far the programme cannot find an MA level practice-based film school as a benchmark.
- The programme is linked to the Nordic Schools network and participates in the EU Media Programme (with Napier, Tallinn, and Dun Laoghaire).
- Illumination brings inspiration: three film schools are invited every year to showcase screenings.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- Each student receives strong support from faculty members and instructors while working on his/her BA degree project.
- In the MA degree programme each student has an individualized study plan in order to support his/her specific talents, and works with the professor and lecturer in his/her specific area of specialization.
- The new BA programme will focus more on experimental work than the previous, traditional portfolio of practical assignments.
- Efficiency is important in supervising the carrying-out of practical assignments.
- Teachers are not required to have studied pedagogics. Practising film-makers always feel more self-confident when they also have skills in this area.
- Each sub-discipline has a very small number of students.
- Students have HOPS, but the close, personal relationship between the professor and the student ensures that the student knows what is actually happening.
- This is a traditionally focused programme – using traditional cinematographic methods.
- Emphasis is on output rather than on the learning process.

c. Degree programme evaluation and development (questions 17-22)

- The main form of evaluation and feedback is based on discussion about the artistic value of the student's work; verbal, rather than written, feedback is the norm.
- Discussions with individual students about their personal study programmes are also important.
- Written feedback would be an important contribution especially if it could appear at the right time (immediately after the presentation of the film).
- Benchmarking is aimed at professional film production.
- Students write their own study diary, which is a part of the assessment.

- Professionals from the industry are invited to the final screenings so that the students get a great deal of feedback.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- The HOPS is a good tool when properly used.
- There are many artists among the teachers who are working in the industry.
- The new BA programme (with its focus on experimental work) is a good step in a good direction.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- In the field of screenwriting research is directly linked to the teaching process.
- Each time the students work together in a group (as in the Cinematography I Course, where directing, writing and cinematography students work together with theatre students) there is an important value-added element.
- The professors and instructors are very much involved in the personal development of their students and do make every effort to make their transition into the industry as smooth as possible.

c. In degree programme evaluation and development (questions 17-22)

- Each thesis is evaluated by two evaluators, one of whom at least is a film industry professional from outside the School.
- The connection with other film schools is important and might be developed further (beyond Illumination or short-term visits to other schools).
- Receiving a great deal of feedback increases the student's understanding of his/her abilities and their knowledge of the process.

4. Recommendations for improvement

- The programme might broaden its overall perspective: graduates could have an impact not only on the national film industry, which is rather limited, but also on the international film and media industry.
- The Department might look at the potential of international applicants for the programme: not only some courses but the whole programme should be taught in English and thereby connect with the international film education market.
- The Department should consider research as an integral part of staff activity. It is important, firstly, to figure out what research really means – it should not only be the creative practice and implementation of some of the experiences in the teaching process - but rather an experimental approach to the broad field of the film and media industries.
- Five-year contracts do not really enable the staff to become immersed in research. Tenure track might be a solution, but it is also important to have an overall strategy for research in which more teaching staff could participate.

- Teaching methods based on experience and intuition are useful in mentor-based relationships between student and professor, but in this format the learning outcomes are not very clearly planned or articulated.
- The programme should define the unique qualities of this programme and use these as the core of the curriculum. It is not very likely that the foundations of both the BA and the MA programmes can remain as broad as they have been in the past.
- Synergies could be much stronger if the programme could offer curricula for major and minor specializations – then students could change the direction and flavour of their education according to their individual talents.
- Students should be encouraged to find appropriate (compatible) degree programmes at other Schools and Universities in order to get a different perspective and begin to develop their professional networks.
- Despite the small number of students in each class, which makes it an intimate peer group, the optimum critical mass is never reached.
- Feedback sessions should be always arranged in an appropriate and timely manner, and for each stage of the production.
- The teachers who are practising film-makers might feel more comfortable if they had some standard teaching skills – this should be offered at the Aalto University or TAIK level.

Fine Arts

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

- This programme has a political focus: All of the teaching focuses on art as a reflection of society (not art for art's sake) - this creates cohesion. This reflection on society is important in developing the students' own projects towards society.
- There are 33 students in total on the course. Ten new applicants are recruited every year, and the students take about five or six years to complete their studies. There are difficulties in getting jobs as artists, but the graduates get all sorts of jobs where their creative competences are valued.
- There is a good balance between theory and practice. The theory part of the studies is improving as the teachers begin to plan the theory package together with the art practice.
- The students are self-directed in their artistic studies, but get feedback from the professor and the visiting teachers.
- As the teaching of contemporary art concentrates on critical art, there many disciplines and different types of media involved. The students study common elements in the MA programme and the subsequent differences are manifested in studio practice and personal artistic work.
- The theoretical studies are supposed to be connected to the practical work but this is not always achieved satisfactorily.
- Given the focus on studio work, there does not appear to be sufficient space in the Department. This has led to problems being resolved on an individual rather than a Departmental basis.
- The sharing of teaching materials could be much better, as the teachers have to share their knowledge to develop new knowledge. Collaboration between teachers could and should be much stronger.
- There is a high standard of education demonstrated but better teaching methods/ approaches must be developed.
- There are no dedicated exhibition spaces in the programme and the students also want studio places at Aalto.
- The professor and the visiting artists that are drawn into the studies give some personal guidance to the students, but it is not enough, according to the students.
- The professor holds workshops in collaborative painting on Fridays and through these workshops students are trained to criticize their own artwork. There were no other examples to evaluate, as the professor does his own artwork for 50% of his contract time.
- Oral feedback is vital but it appears that some students are left to their own devices as they are not comfortable with public speaking.

- What is '*good art*' is evaluated by the professor and there are no written objectives or common assessment criteria.
- There is a strong focus on outside galleries, and also on students winning competition prizes and getting grants and having an active role in the art world.
- The students do not get enough feedback in the Fine Arts. Only 25% of the students have personal discussions with the teacher/professor.
- Measurement of progress is difficult in these disciplines so the students should get more group feedback, during and after the courses.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- Lack of staff is a problem with only one full-time staff member; half of that time accounts for his own work. Thus, students feel lost with the professor seeing them once every second week.
- Lectures provide a meeting point for everybody, but those who are not involved in painting will not see the professor every week (there is a whole-day painting workshop every Friday) as collaborative teaching led by the professor accounts for 3–4 days during a seminar.
- Research is now becoming more and more embedded in all art-related studies, and the professor and the teachers intend to organize more workshops in the art fields outside the University.
- The main educational outcomes are not always achieved. The competencies from the degree programme are to produce good artists who are theoretically enlightened and can produce good (!) contemporary art.
- There was no evidence of systematic collection of student feedback. The programme has to be more structured in securing and reflecting this feedback. There should be much more feedback collected and used during studying!

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- One good study guidance method is demonstrated when the teacher does give feedback about the students' artwork and tells them where to show it in the art world.
- Visiting teachers and guest artists are selected according to their teaching skills in addition to their ability to produce good art.
- There are no numerical grades given for the Fine Art students' assignments, but feedback in the groups is given as a collaborative development of knowledge. Students' portfolios enable the good work to be documented.
- Collaborative methods are highly valued. Instead of personal feedback, they are trying to develop new teaching methods for students when they invite an artist to take part in a workshop. (The main thing is the visitor's artistic work and, secondly, their pedagogic values.) Teaching methods include lecturing, reading books and taking the examination as well as discussion sessions at seminars. (This does not usually work very well, as Finns are not happy speaking in public.)

c. Degree programme evaluation and development (questions 17-22)

- There is competition on a local level with the Academy of Fine Arts, although they do measure themselves directly against the Academy, but as they have a stronger theoretical strand in their programmes, they are more popular.
- If a student gets a gallery exhibition, then the course is deemed to be a success. Some students go to galleries, some go to the art scene (difficult to make a living), and others slip into other occupations, including PhD studies and research.
- Students present their work in Berlin and make joint projects with Weimar. In this way student work is benchmarked in competitive exhibitions and such competition pushes the highest standard usually.
- There are regular group meetings (of 20–30 students) with the Head of the Department.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Students come from all over the world (60% from Finland/40% from abroad).
- All of them already have a BA in Fine Art.
- The entry criterion is a BA in Fine Art. Students come directly from the BA programme or they are practising artists who feel the need to learn more and to theorize more. The two groups become merged during their studies.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Non-art studies, such as philosophy, politics and social sciences, are obligatory and they offer an exciting menu for the emergent artists.
- Courses are also given for art education at the MA level, so the pedagogically oriented students can benefit from this art education.
- The collaborative evaluations of the artworks are central and the staff try to encourage the students to talk about their own work.

c. In degree programme evaluation and development (questions 17-22)

- It appears to be difficult to give courses that suit every student. There is no single course organized for all, although students are given assignments and use the general studies course to serve their needs.
- The teaching staff will need to organize more formalized guidance for the students' written assignments in the future.
- There is a need to procure more staff. (There is only one professor.)

4. Recommendations for improvement

- The teaching methods should be more varied; there are conceptual approaches to artworks but there should be more sense-based methods – perceptual examinations, formative and non-verbal reflection.

- In Fine Art the evaluation process has to be given a more formal form so that students can see what is expected of them on a broad scale, and not only in detail.
- Staff focus too narrowly on artistic practice; students have to produce good art, but the criteria for 'good art' are very blurred and subjective. There have to be some assessment guidelines for what must be included in each art project, e.g. courses can be different according to the type of art practice – but a list of fixed theoretical aspects must be considered as content in all of the categories in contemporary art. The staff also need to be more open and informative about the courses.
- What assessment methods and criteria are used? The students think they know what the professor is expecting, but it is not written down in any form, so we recommend that they have discussions about the artworks presented and that the discussion should also include a critique, so they can present and reflect on their work. Written feedback would help the students to keep up their good artwork and to experience some structure in their studies.
- The web pages that the students make at the beginning of their courses could be extended to include a digital feedback method, as they are already using digital portfolios.
- Research on learning and teaching should be included in order to develop teaching. Some of this could include the MAs in art education and be included more in the discussions and evaluations.
- Research and artistic practice enable the teachers to give students proper feedback. The opportunities of personal feedback after a course are as follows: 50% get an occasional personal discussion, and only 50% get group feedback discussion on occasion. 50% never or seldom receive any feedback. Measuring students' progress is difficult in these subjects.
- Staff must receive feedback. If one is going to give responses to society, as the professors here are focused on, one will have to include more students in the discussion. It must be embedded as part of the studies to contribute to group discussion and for students to be able to verbalize and reflect on their projects. Students should also get more group feedback during, and after the courses.
- The teachers should be able to take courses in didactics and pedagogy in general.
- We would recommend formulating a written description of what is expected in knowledge areas, skills and competences.
- The students do not get enough feedback in the Fine Arts. There are only 25% in any group that have a personal discussion with the teacher/professor.
- The students should also get more group feedback during the course and after the courses. Measuring students' progress is difficult in the Fine Arts subjects.

Graphic Design BA+MA, Photography BA+MA

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel was pleased to receive and read individual discipline SERs (Self-Evaluation Reports). As both Graphic Design and Photography are part of the new Media Department, the interview was a joint one, with both Departments. In the light of commonalities, shared views and ethos that became apparent during the interview, the Panel prepared an overall report for the BA+MA studies in Graphic Design, Photography, to ensure that the outcome would benefit everyone and still recognize the individual nature of the disciplines.

The interviewees were asked to define their own strengths and weaknesses.

Strengths:

- A long history of education and professional continuum
- Strong intake through the selection procedure (approx. 3% intake from the applicant pool)
- Intake of mainly older students with prior higher education learning experience
- A high level of output (150 prizes a year by both students and professors)
- A firm decision to put a new Media Lab, and a graphic design and photography unit, in the same Department: a common synergy was found with shared areas of interest
- New minors and courses are developed between Departments and disciplines.
- Common courses and research methods are shared.

Weaknesses:

- It is impossible to cover all of the specialized professions in the field; insufficient time allocated to work on new developments.
- There is continuous work overload for both students and staff.
- Minors are in place, but they contribute to the course load when taken together with common courses from the Department of Design and courses in research methods.
- The size of groups has decreased significantly.
- Programme of Graphic Design does not feel that they are responsible for the pedagogical training and expertise of their teaching staff.
- There is no systematic approach to go through feedback forms or to discuss the results between teachers.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

'The School is good for students who already know what they want to do.'

General observations:

- Quality in general: good.
- Graphic Design collaborates with the Media Lab; together with Photography and New Media they form the newly established Department of Media.

Feedback and assessment:

- There is an electronic feedback system to evaluate courses, but students fail to comply with the rules when returning their views.
- Course descriptions; assessment criteria and self-reflection are in place, but not actively used. Students make weekly learning reports which include high levels of self-reflection.
- There was an appropriate blend of oral, written and self-evaluated feedback.

BA/MA level and assessment:

- There seem to be no boundaries to get from (an incomplete) BA to MA, once you are a student at the University. Most students enrol for a five-year MA but take much longer to complete their studies.

Study load:

- The students' study load is condensed to 28 study weeks within a year, resulting in a heavy workload for both students and staff; they are still unable to comply with European ECTS standards. (On average they have 57 hrs per week during their study weeks.)
- Students often take seven instead of five years in which to complete both the BA and the MA.

Student profile:

- Overall, the student profile is based on artistic quality, motivations and a wide range of skills. Tutoring is personal, with many individual meetings with the study co-ordinator.

Course development:

- In general, as the professions in the field of photography and graphic design change, more knowledge is needed, so more basic studies are required. This is acknowledged by both programmes but, in actual practice, there is not enough time to reconcile that appropriately.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- Basic studies are in place for both programmes, but the extent and content of the basic studies course is considered to be too time-consuming.

Study guidance and counseling:

- One of the main problems has been to figure out how to keep students in an active momentum in their learning process. The problem is mostly due to students being offered work from employers during their studies.
- There seems to be a lack of responsibility for study planning by the students themselves; students rely too much on staff for this.

Teaching methods:

- Small groups and personal teaching provide intensive personal development during the course modules. Nevertheless, students feel no urge to graduate in time. (There is no social or financial pressure to do so.)
- In Photography and Graphic Design there is a common practice of Team teaching and/or co-teaching, although the staff feels a need for more resources to expand this practice.

Assessment criteria:

- Assessment criteria are usually given orally only and not in a written format. Pass/Fail should be supplemented by more helpful assessment. There seemed to be many different practices being used across the School, which can be good - but in this instance suggests that students are being treated differently by different Departments.
- The programme leaders are aware of this and try to disaggregate courses to make it easier for students to progress. (The largest unit is 9 ECTS; the advice is to split up into units of max. 3 ECTS.)

c. Degree programme evaluation and development (questions 17-22)

Co-operation among teachers:

- The degree programmes are usually small peer groups and allow close contact; Co-operation is encouraged within the programmes, and this co-operation is emerging between programmes within the Department of Media.
- There is a culture of peer review; improvement is based on peer reviewing of teaching among teachers.
- Due to the recent change of Departments, both programmes need to revise their basic courses to be able to comply with their common studies in this new setting. The MA requires a change of teaching approach and this should be considered with some urgency by the teaching team.

Evaluation method:

- Oral evaluation is the most common method of evaluation and is highly appreciated by students and staff. The panel would like to stress that this method lacks transferability and transparency of information to monitor the overall student learning process.

Pedagogical competence:

- There is a need for enhancing pedagogical competence. Courses are in place, but the Department lacks allocated staff contract time to take part in the training and courses on offer.

3. List of observed best practices

- a. **In degree programme planning and management (questions 1-8)** See 1-2
- b. **In implementing teaching of the degree programme courses and modules (questions 9-16)** See 1-2
- c. **In degree programme evaluation and development (questions 17-22)** See 1-2

4. Recommendations for improvement

The Panel recognizes that the level of student output is high. At the same time there seems to be a problem to get a grip on the educational process that students are going through.

Recommendations:

- Systematic feedback procedures should be developed further and put into practice.
- The Department of Media is invited to develop a format for a project or assignments brief with detailed learning outcomes that are matched to assessment criteria.
- To better prepare students for both the BA and the MA and subsequent professional life, self-evaluation and self-reflection should be incorporated into the assessment procedure, as this will enhance learning outcomes and the monitoring of progress.
- The strengths of each programme within the Department of Media should be used to set up new ways of practice.
- The workload for students should be examined closely and choices should be made.

New Media MA and Sound in New Media

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

- The programme is aware of the dynamics of the area (what is “new” in New Media).
- The programme’s overall aims are a reasonable combination of art and research projects and traditional coursework – therefore the teachers should have more time for research in order to develop new ideas and methods.
- Both students and faculty come from different backgrounds and with various perspectives, which reflects on how this field can develop internationally.
- It is beneficial that many incoming students are from international backgrounds.
- The students are older, more experienced, more mature and responsible.
- Small groups of students are flexible; teachers and staff can listen to the students.
- The programme reacts to new phenomena in areas of interest (recently, for example, with stereoscopic technology).
- All students are new to the Media Lab and they have to learn how to use it. A bridging programme might help those who have less technical skill.
- The faculty are ready to co-ordinate the curricula with other programmes.
- Those in charge of the programme are aware of a lack of theory and academic research.
- The New Media Department co-operates with many other programmes within Aalto University.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- Students who apply for the programme come from different schools. They must have a BA degree or equivalent.
- Many students come from abroad.
- Applicants typically have some work experience. (They are 25–30 years of age.)
- There are twenty faculty members, including researchers who teach typically only a single course.
- Altogether approx. 70 students are registered, of whom only 40–50 are active + exchange students + students from other programmes.
- Approx. 20% of the students drop out.
- Conflicting schedules limit the presence of other programmes’ students in the New Media programme.
- Students usually graduate after three years of study instead of after two. Two and a half years would be the proper length according to workload. International students usually graduate in two years. Overall, students who stay longer have better results.

- Approx. 80% of the students graduate from the programme.
- With the IT boom ten years ago it was very easy for all graduates to get a job. Now it is more difficult.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- Individual courses have individual teaching methods; there are no overall systematic rules.
- Individual courses need specific teaching methods according to their expected learning outcomes.
- Programmes do offer courses that compensate for the lack of theory in the area.

c. Degree programme evaluation and development (questions 17-22)

- Programmes are aware of their position in the field and have clear benchmarking strategies (UDK Berlin, INCAR, Mc Gill U, zkm Karlsruhe, and MIT).
- Teachers meet regularly once a week; a shared open office provides a good environment for continuous discussion.
- Special meetings for curriculum development are co-ordinated within the Department.
- Sound in the New Media programme has a steering group with representatives from the Sibelius Academy, the Theatre Academy and the gaming industry etc.
- Alumni are involved in teaching. They propose new course development.
- The assessment criteria are clear and communicated to the students.
- Course descriptions are available online.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- People representing the industry are involved.
- There is active feedback between faculties and students.
- There are clear assessment criteria.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Lecturers from outside the School keep students in a contemporary relationship with the area of their studies.
- The content of studies should not change too often so that it remains consistent.
- On-going research is an important component for the programme.

c. In degree programme evaluation and development (questions 17-22)

- The curriculum is developed in consultation with the relevant industry.
- The programme is creating a network of international experts in the field.
- Students visit internationally important events, e.g. Ars Electronic.

4. Recommendations for improvement

- Employers' representatives should be invited to participate in curriculum development in a formal, structured way.
- Sound in the New Media programme steering group with representatives from the Sibelius Academy, the Theatre Academy, the gaming industry etc. should be more structured in order to be more effective.
- The curriculum should be updated in a reasonable, structured manner.
- Programmes could offer more shared courses.
- ECTS should be used as a tool for improvement of the curriculum and the workload.
- The Department should continue to invite academic visitors from abroad who bring their expertise and pedagogical as well as artistic practice.
- The Department should maintain a very clear distinction between academic and commercial aspects of the discipline.
- The Department should not lose its lively relationship with its students, even though Aalto University's new information system might be less appropriate to its needs and habits.

Part B. Feedback and recommendations for the students of all degree programmes of the School

Programmes in the School of Art and Design have many strengths, but many of these strengths are also weaknesses. The following section identifies some of these strengths and weaknesses. Students should take an active part as partners in reviewing and revising the School vision, programme management and the curriculum – as these developments will have a positive impact on their learning experience and career and professional opportunities.

Teaching and learning environment

Teaching and learning is conducted in small groups, with much personal attention. The curriculum is often adapted to the students. There are opportunities of mobility with other departments within the School, and also within Finland and internationally. Students have a lot of freedom to experiment, and to engage in cross-disciplinary learning if they desire. The learning facilities are of a very high quality, with ample resources, especially when compared internationally. The School provides a unique learning opportunity for those students lucky enough to be accepted.

Small-group learning can be a weakness, with a lack of critical mass – in other words, some of the group sizes are too small for some work to be conducted, e.g. film. Personal contact with staff can lead to a claustrophobic learning environment, with insufficient new ideas. (International) mobility is not integrated and taking up such opportunities can lead to a delay in completing the programme on time; in some instances, course work done abroad is not included.

Programme planning and management:

The entry assessment is very tough, with approximately 1 in 25 students on average being accepted, depending on the programme. It seems a fair process but, once the student is admitted, there seems to be a lack of rigour. Overall, there is a culture where delay in one's studies is accepted. Reasons vary from uncertainty about professional preparedness to needing time to develop personally and wanting to benefit from the time available to learn. It is also not uncommon that students will gravitate from the BA to the MA without completing the former. We understand that this is to cease under new legislation. It also seems socially acceptable not to complete a degree. This is emphasized by the fact that it is acceptable to be employed as a professional before graduating. It is general practice (sometimes also due to the lower costs of non-degree work) that students delay graduation to improve the chances of getting jobs. Some of this practice is particular to the fields of study, e.g. many employers are more likely to look for experience and the portfolio rather than the credential. Such practice, however, does not create a positive learning experience for students or for the School.

Pedagogy and didactics; Research and teaching: “They like teaching and we like to be taught.”

On balance, students are positive about the relationship between teaching and pedagogical work. Teachers generally have a personal way of teaching, which is appreciated. Students are aware, via informal channels, of the professors’ research interests and point out that there should be a pedagogical perspective as well as a professional career. This leads to an informal and friendly learning environment. Students may be consulted with regard to new appointments, and be asked to give their feedback on the demonstration lecture that a potential professor might give. Teaching skills are important, but it is considered most important that staff are involved in the profession and most staff are. However, this same environment has some drawbacks. Because of professional involvement by the staff, it may be difficult to find sufficient time with the professor. Likewise, given the preference for professors with professional skills, they may lack pedagogic skills and understanding. Thus, most feedback is on a one-to-one basis, and this can vary from individual to individual, and from professor to professor.

Assessment criteria and feedback

As above, the small informal environment means it is not always clear to students what the assessment criteria are. This only becomes clear as the course progresses – rather than being up-front. Students often claim they receive the best feedback from their own peers. Feedback on projects is also given by professionals outside the institute.

This process has several disadvantages: it can be too personal; it might not be sufficiently articulated – often due to lack of pedagogical skills by the staff. Because of the informal, friendly atmosphere, students become confused by the feedback; they may take criticism too personally. The grade is often agreed upon with the professor in (informal) feedback sessions – but written feedback may show a discrepancy with what had been presented orally. In cases where students may feel unhappy, the student association is consulted.

Staff development/skills

Students are aware of the fact that professors do not have sufficient time for their teaching, development work and research. They also refer to staff being under pressure regarding budgets and are sympathetic to the bureaucratic load that professors bear. The other side of this coin is that it would appear that the line between staff and students may be breached at times – raising some questions about professional ethics.

Student support/experience/mobility

Students feel they have a heavy workload, but welcome the unique experience as an opportunity for their career, and to build up good portfolios. The HOPS – the individual study plan works well, although it does not seem to work as a tool to ensure progress and that students graduate on time.

International mobility is encouraged, but this tends to expand the length of study. This may be due to the timing of the exchange and its organisation. Students appear to receive insufficient information about different opportunities and about how these opportunities fit within the School’s own study programmes.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

The Panel reviewed and evaluated the strengths and weaknesses of the individual programmes, and of the School overall. It is important to note that the Panel was hugely impressed by the School's many strengths but also notes that these can also be a source of its weaknesses. Our comments aim to ensure that the School of Art and Design can build upon its many strengths, and continue to be a centre of excellence in the 21st century.

This report is divided into the following three sections: Strengths, Weaknesses and Recommendations.

1. Strengths:

The Panel is extremely impressed with the speed with which Aalto University has established itself as a defining vision for the new University, in which the School of Art and Design will play an important role in the future. The School (TAIK) has a national and international reputation of providing small, intimate, professionally focused education in art and design. It has select entry standards with a strong focus on high artistic values and personal development for the students. There are customised study tracks via the HOPS process, which facilitates a wide range of learning opportunities. Students achieve very high standards, which are recognised by employers, and enjoy their learning experience supported by a strongly committed staff with a high level of professional/artistic expertise and experience. There is an enviable staff–student ratio. Students are encouraged to take up opportunities to study abroad, and there is a high proportion of international students, which creates a strong internationalism throughout the School.

2. Weaknesses

2.1 Coherence:

Departments and programmes appear to operate as independent islands that lead to each other with little connectivity. This is evidenced by differences in organisational and leadership roles between departments, and a lack of consistency in the approach to teaching and learning, assessment and evaluation, research, and the student experience across the School. As a result, there appears to be an absence of cross-disciplinarity between programmes, and hence between the students and the professors of the various programmes. It also results in on-going competition for and dissatisfaction with resources, whereby each programme argues that it lacks adequate resources. From the external stakeholder viewpoint, there is a concern that the School is falling behind in some fields, and is no longer seen as in the vanguard of the profession or new thinking.

2.2 Educational Experience

While the small intimate education environment, with its customised study tracks,

is enviable, it facilitates 'too many' learning choices for the student and could be said to be akin to 'children in a candy shop' and may be one of the reasons contributing to the fact that students do not complete their programme of studies on time and, in some instances, never. Entry to the School is tough, with students through a rigorous application entry process; this creates a privileged educational environment. However, this rigour does not appear to follow through, in that, once the student has been admitted, guidance and assessment can be lax and lenient and it can be difficult to understand how the standard of quality is maintained. The small student and staff numbers and class/cohort size means there is a lack of critical mass. In various instances, it can be difficult to offer particular specialisations.

In addition, the close relationship between students and staff, described as 'cosy' or 'motherly', creates an insular and potentially claustrophobic atmosphere in which students are insufficiently challenged by new ideas. And, because the 'industry' is relatively small, and most employers have a relationship to the School, given its national standing, this cosiness extends to the relationship between the School and the 'sector'. (See also below.)

The traditional 'atelier' teaching/learning model, which underpins this environment, is no longer appropriate for the 21st century. It is too often based upon an individual staff/professor's experience or subjective view of what the student is required to learn rather than a curriculum with clear learning outcomes and forms of assessment. This creates a tension between the educational and professional mission; in other words, because of the professional focus there is a tendency to over-emphasize the final product (artwork, film, etc) rather than the learning process – hence distorting the role of the School. So, the purpose/outcomes of the BA and MA become blurred, and students appear to drift from one to the other; this also refers to the rigorous entry standard for the former, which does not follow through to the latter. Finally, there is an inadequate tracking of graduates, and hence insufficient understanding of what the future 'real world' demands are and how these are/will be impacting on student career opportunities. This is especially critical, as the average completion time for the 5 yr BA+MA is 6.8 years, and the world-of-work is a very dynamic and fast changing environment.

2.3 Student Experience

The small intimate 'cosy' environment also means there is not a common student experience; this is not about all students doing the same thing or at the same pace, but rather that the quality of the student experience, the quality of their learning experience, supervision and feedback should be comparable. The personalised relationship between staff and students leads to inconsistency in approach to assessment methodologies and a lack of transparency as to the criteria being used for assessment, including the format and content of feedback given to students. The HOPS is a strength, but there appears to be insufficient guidance for student learning and employability opportunities. This means strong, articulate students do best while weaker/shy students can lose out and, overall, students can spend a considerable amount of time studying, many without completing their studies.

The close, cosy relationship between staff/professors and students is a very positive one. However, there are dangers that the professional relationship can be breached either by preferential treatment for some students or the opposite, the way in which

students interpret feedback, the ‘mothering’ approach that some staff feel towards the students, etc. This raises questions about maintaining professional ethics.

Finally, there is a sense that the benefits of Aalto University have not been clearly articulated to the students and to the staff. This is especially critical for Art and Design, which is the smallest School within the new University and risks being overwhelmed by the University.

3. Recommendations

3.1 *Building Strategic Coherence*

- a) Reflecting the School’s unique tradition and education/research/professional focus and in order to overcome many of the issues identified above, there is an urgency for the School to establish a stronger steering and leadership core with a common vision across all the departments. The Heads of Department should form an essential part of this process – so that there is a shared vision for the future of the School in the 21st century, and for the School within Aalto University. This would also be important for morale – as there is a concern that the essentialism of art and design could be lost. Cross-cutting initiatives should be developed to encourage and ensure greater inter-disciplinarity between the various departments – and also to ensure wider educational understanding and opportunities, for example, by extending basic studies to incorporate a common horizontal seminar/workshop in, say, visual culture and innovation, as a common backbone running through each year. Greater sharing of facilities and courses could encourage students and professors to work together, and learn from each other.
- b) In many of the self-evaluation reports and the oral sessions, academics commented on the inadequacy of resources - both human and physical capital. Without detailed information, it was difficult for the panel to understand the veracity of these statements. Nevertheless, assuming there is some justification for these comments and in light of the comments made below, the School should embark on a strategic review of programme provision. Are there too many subjects and programmes being offered? Should the School consider consolidation in order to enhance the quality of the learning environment and place the School in a better position, competitively? Should the School consider exiting provision in some fields? Should the School or Departments share resources or programme delivery with the new University of the Arts or neighbouring polytechnics?
- c) Given likely changes at the policy level to the funding model for higher education, a review of the cost basis of the programmes should be conducted without delay to ensure sustainability. The staff–student ratio in some instances is 2:1, which is quite exceptional, although there is a consistent view amongst the staff that the School lacks adequate resources, whether human or physical. It seems that the current funding and resource environment will probably be difficult to maintain in the future, as it is not cost-effective, and so the School should develop a transparent resource allocation model – but this should be based upon a critical strategic assessment of which art and design fields the School wishes to remain in – and then resource them to the appropriate standard.

- d) It would be advisable to bring new ideas into curriculum development and review. Therefore, an industry-community advisory committee is recommended to ensure more formal engagement with key stakeholders (alumni, employers, professional organisations). This could also help to ensure that the programmes are ‘future-proofed’.

3.2 Modernising the Curriculum

- a) The curriculum should be revised in order to ‘future-proof’ the programmes better, and with a greater focus on preparing students for the ‘real world’ of work, in the knowledge that the labour market is very dynamic. Programmes should maintain a balance not only between skills, conceptualisation and academic knowledge of the field but also between communication, business and entrepreneurial skills, plus an understanding of intellectual property, and valorisation/commercialisation opportunities. Programmes should be designed to ensure students can meet all their educational objectives within the appropriate timeframe (BA = 3 years, and MA = 2 years); hence, international mobility should be embedded within the programme timeframe. In recognition that many of the students are mature with family or work commitments, new modes of study should be developed, e.g. part-time studies, summer school/courses or work-based learning.
- b) Research appears to be high on the agenda, but there is a lack of clear understanding and relevance, across all departments, of what research is in an art and design school. There is a sense that research is nice to have or that it is the ‘source’ of new ideas – but it does not appear to be integrated within the consciousness or within the curriculum, or within the professorial workload.
- c) The HOPS is an important vehicle for customising student study according to need and interest, but it should be refocused as a Personal Professional Plan rather than simply a study plan. To ensure these plans are ‘Future-proofed’, they should include career planning. There appears to be a national concern about the number of art and design graduates, and so career-opportunities should seek to recognise the inherent intellectual skills of such graduates that can be used in a wide variety of life-choices.

3.3 Ensuring quality and world-class excellence

- a) Common assessment and evaluation regulations should be developed, to ensure there are clear and unambiguous guidelines with respect to the student learning experience. Assessments should be clearly mapped against the learning plan, rather than based on individual approaches. This requires a deepened understanding of pedagogic training, which makes a distinction between the attainment of professional skills and the learning process – as the staff are appointed because of their professional/artistic skills and may have little educational experience. Student feedback should be embedded in the programme development/revision process, to ensure a positive feed-back loop (e.g. the past influences the future).
- b) There is evidence that student opinion is often sought. Student representation should be embedded and formalised, for example on programme committees. How students are selected/elected is a matter for the School/Aalto to consider, but consultation with the student union would seem appropriate.

3.4 Embedding a Common Student Experience

- a) Aalto University and the School of Art and Design should consider drawing up a Student Charter to provide an overall vision and expression of values. It is not a contractual document between students and the University but, rather, should embrace the concept that the University is a community of learning and that its members exhibit good citizenship within the University and in their dealings with the wider world. It should rest on the guiding principle that students are active partners in their own education and in the academic development of the University, and it should outline rights and responsibilities. This should help to ensure that all students, regardless of which Department they are studying in, have a common experience.
- b) The School should therefore consider pooling many of its support services, which seem to be currently provided in different ways in each of the Departments. For example, it should create a School-based student support system.
- c) The intimate atmosphere of the School appears to overly cosset the students, in a privileged environment of enviable resources, which does not encourage them to graduate on time. There, student-directed learning should be embedded within the learning ethos – with a stronger emphasis placed on making students responsible for their own learning and career-planning.

Part D. Observations on the evaluation process and recommendations for improvement

- There was a lack of sufficient background information to help the Panel gain a wider understanding of Finnish education, policy changes, Aalto and School structure, including organisational chart, curriculum, and student work.
- The self-evaluation form was overly complicated with too many questions, many of which were repeated. This same criticism could also be applied to the Panel Feedback form.
- The number of programmes to evaluate made it difficult to make assessments at the appropriate level, e.g. there was insufficient time to get a full understanding of the programme.
- There was insufficient engagement with academic staff or students during the process.
- Many of the staff seemed to lack understanding of the TEE process, goals and benefits – giving the impression that it was either top-down from the University or distributed to individual units to complete.

Appendix A2

The School of Chemical Technology

Chemical Technology

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel finds that the Aalto Degree Programme in Chemical Technology (CT) has a good reputation and fine traditions of co-operation with practice and Educational Institutions and is, as such, considered a good programme in its field. The fact that students have to have high marks to enter the programme supports this.

The research areas are wide and have strong co-operation with the practical world, and more companies are actively supporting Master's degree students from the programme by offering them the chance to write a thesis during their practical training. Many Ph.D. students are involved in research projects in co-operation with industry.

The CT programme has been able to utilise research results and findings to implement the quality of learning, and this has not only strengthened the programme in general but also strengthened the research-based education in particular. In the field of research and co-operation with practice, the CT is considered to have strong research and teaching areas.

One example within the CT programme regarding teaching is that there have been great efforts to synchronise courses and laboratory classes. In addition, they have further introduced new teaching approaches and implemented new learning methods such as learning diaries, mind maps and Problem-Based Learning in some courses.

Change in the practices in the planning and teaching areas has been evident in the efforts to enable implementation of practical elements in the studies from the beginning of the first year studies, which has been one of the things students have asked for. The programme takes advantage of the availability of the JOO studies.

In the field of internal co-operation and social networking, the teaching staff has widely been involved in the self-evaluation report exercise and contributed with information and assessments. The teaching team has further been unified in the developing and defining of learning outcomes for some courses, and through that has shared its experiences.

The Panel found through its interviews that there was a readiness and willingness for change and there was motivation for improvements in initiatives. One example which supports this is the fact that they have been able to develop more hands-on activities as an active part supporting the students intended learning outcomes. This element has been brought forward in the student interview as a missing part in the previous teaching format. Overall, the interviews were very informative, with open-minded discussions.

In the CT programme, novelties have been initiated in the area of ICT. During the interviews interest was expressed in joining forces to develop ICT teaching and learning methods across the programmes Material Science and Engineering and Chemical Technology programmes.

In the CT programme innovations exist in the area of co-operation between the various groups involved in the programme. Such innovative initiatives have been the ICT Lab Life 3D. Another example is the planning days, where the staff go to a place outside the University to make plans for the education/modules. This activity also serves as a social event which also involves all new teachers.

2. Evaluative feedback

The first grade is from the self-evaluation report; the second is given by the Panel.

a. Degree programme planning and management (questions 1-8)

Degree Programme Management:

- 1c: 2 (emerging) – how well the management procedures support the degree programmes in achieving their objectives. *Panel: 2 (emerging).*
- 2c: 3 (good) – connecting research and teaching. *Panel: 3 (good). However, further use of contemporary teaching methods is highly recommended.*
- 3c: 3 (good) – success rate for drawing up the outcomes. *Panel: 2 (emerging). The Panel finds that there is still room and need for improvements. The educational outcomes described are on a very low level, as the level for a B.Sc. is, for example, “knowledge of”, “good knowledge” and “sufficient language skills”. The outcomes do not comply with the Bologna Declaration standards. The Bologna Declaration mentions three areas: Knowledge, skills and competences, which should all be described at each course/subject level.*
- 4c: 3 (good) – success rate for the course and module outcomes sustain the learning outcomes in the degree programmes. *Panel: 3 (good). The Panel finds that there is still room and need for improvements. However, there could be more co-operation between teams, as it is declared that “Planning has focused mainly on advanced modules and each research group (laboratory) has co-ordinated the teaching on its own”.*
- 5c: 3 (good) – success rate for supporting and monitoring students’ competence developments. *Panel: The strategy in 5a is very good. However, the “counselling is obligatory throughout the studies” does not seem to be supported elsewhere in the self-evaluation report or through the interviews.*
- 6c: 3 (good) – success rate for study time allocation. *Panel: Somewhat difficult to evaluate, as there are some apparent contradictions.*
- 7c: 3 (good) – mobility opportunities provided by the degree programme. *Panel: 3 (good).*

From the summary of questions 1-8, the following seem to be essential and important to look at: There seem to be problems at the organisational level about the issue of defining the Programme Director’s tasks, power, resources and competences, which seem to be almost absent. The important issue for the Programme Director is to have access to resources in the form of money to be able to actually fulfil some of the tasks he or she is supposed to be responsible for.

It seems that there is a tendency to move toward a more top-down decision structure in the organisation. And in these top-down decisions, it seems that no feedback has been collected to improve the quality and reliability of decision-making. The development

initiatives promoted by the University seem to be decided without considering the difficulties they may cause to faculty to act upon them. Relating to this, the use of feedback seems to be lacking not only at the study level, but apparently at more levels.

It has become clear during the evaluation process that there is a need for more transparency in the organisation. This issue has been put forward by teachers, members from industry, educational developers and also students.

There is a discrepancy between the self-evaluation individual questions 1-8 and the summary itself in subsection 8, as the evaluation by the staff does not seem to support the average level 3 (good) that is claimed.

The Panel's overall evaluation is between 2 (emerging) and 3 (good).

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

9c: 3 (good) – integration of basic studies in the degree programme. *Panel: 3 (good).*

10c: 4 (excellent) – student guidance. *Panel: 4 (excellent).*

11c: 3 (good) – success rate for supporting teaching. *Panel: 3 (good). However, if (11d) students learn best in groups, then why not use them more?*

12c: 3 (good) – suitability of teaching and pedagogical models in supporting learning outcomes. *Panel: 3 (good). Even though initiatives have been taken towards more student-centred learning in labs etc. there is still room and need for improvements. For example, the sizes of the groups are too big, there are too few teachers (“need for more teachers”).*

13c: 3 (good) – success rate of evaluation methods generating information for teachers and students on the intended learning outcomes. *Panel: 2 (emerging). Strong need for improvements. The main factor is the widely used written examination, which not will be the aligned examination method when one is using more complex teaching and learning methods. A variety of different evaluation methods is strongly recommended.*

14c: 2 (emerging) – feedback in practice. *Panel: 1 (poor). The feedback system does not work – in either direction.*

15c: 2 (emerging) – state of resources. *Panel: 2 (emerging).*

From the summary of questions 9-16, the following seem to be essential and important to look at: The system of giving the students feedback does not seem to work in practice as it was envisioned to do. Students' statements seem to be contradictory to the report. However, it seems that teachers and students have different views on what feedback actually is. There are, however, examples of well-functioning feedback.

The lack of resources is mentioned in the self-evaluation report, but it is not clear what this covers and what the resources have to be used for.

The overall evaluation is between 2 (emerging) and 3 (good).

c. Degree programme evaluation and development (questions 17-22)

17c: 3 (good) – collecting, processing feedback. *Panel: 1 (poor). See 14c.*

18c: 4 (excellent) – workplace and stakeholder feedback. *Panel: 3 (good) to 4 (excellent). During the interviews the students mentioned issues for which their feedback had not produced any change (for example, more use of PBL and problem-solving methods).*

- 19c: 3 (good) – how co-operation between teachers is carried out. *Panel: 4 (excellent). However, formal biannual pedagogical meetings could be suggested.*
- 20c: 3 (good) – pedagogical competences of staff. *Panel: There is a general problem with non-permanent teachers' pedagogical training. 2 (emerging) - 3 (good).*
- 21c: 2 (emerging) – how much knowledge about learning and educational development is used in the development of teaching. *Panel: See 20c.*

The electronic feedback system does not seem to work for the purpose and for quality assurance in the short and long term.

The resource questions are repeated again in this section.

The teacher training is evaluated to be accurate and effective.

The overall evaluation is 3 (good).

3. List of observed best practices

Quotations are from the self-evaluation report.

a. In degree programme planning and management (questions 1-8)

- 4d: The synchronization of the courses in Biochemistry and Microbiology has been developed and implemented in terms of learning outcomes, lab organization and scheduling. The evaluation of the courses is also synchronized. This is very positive for the students in many ways; they feel that courses interact and co-operate with other courses within a programme.
- 7d: *"The Flexible study right (JOO) system, and the electronical process, the interdisciplinary Helsinki Region Biotechnology Educational Programme (HEBIOT) and the modules for optional studies improve the opportunities to utilise courses from other universities in the degree".*
- 5b: The counselling process described in Section 5b is highly beneficial from the student's perspective. The personal study plan (HOPS) is an effective tool for planning the studies. The process in which making the HOPS is first guided by the student advisor and finally approved by the study co-ordinator insures that both the student's individual interests and the career relevance of the curriculum are taken into account.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- 11d): *"The students learn best in small groups of max. 10 students, especially in the laboratory. Individual teaching is given whenever possible to ensure the best results. Learning diary comments have been found to be a successful method for both evaluating the student's understanding and giving advice. Since the learning diaries are commented on several times during the course, it makes the feedback back and forth almost real-time".*

Learning diaries are a good method for encouraging students' own thinking and analyzing the subject and giving continuous feedback on learning throughout the course. The method includes the student's own work in the start-up but involves the teachers in the feedback dialogue which is positive for the students.

The virtual laboratory LabLife 3D is an innovative initiative in utilizing ICT in teaching. When it has been further developed LabLife will be useful, especially in giving students more chances to reflect on and revise the laboratory exercises without safety concerns.

12d): *“The best results are obtained when students are motivated. For instance, in general chemistry courses learning outcomes were improved when exercises were modified so that instead of copying the right answers, students thought over the examples by themselves under the instruction of teachers. Also, group sizes were decreased and the number of teachers was increased. In order to get students to work by themselves, a reward system was used by which students obtained extra points from the exercises and these points were added to the final points.*

In general, motivating students by showing them the relevance of the subject to be learnt (excursions, examples from industry in lectures, everyday samples and processes in laboratory work) has proven important. In addition, teaching methods utilising learning diaries, mind maps etc. where the focus of the assessment is transferred from the final exam towards other course activities have increased students’ motivation and improved learning”.

9b: The initiative of integrating applied chemical technology (some research-based) problems and questions into the teaching of a basic mathematics course is an excellent way of motivating students in the first study year. In this way they can immediately realize the connection and applications of basic mathematics to their future major subject.

c. In degree programme evaluation and development (questions 17-22)

19d: *“ ... The Degree Programme Committee decided to organise a Teachers’ Day in August 2010 for teachers of the School of Chemical Technology. A need for continuous discussions between teachers was obvious and a teachers’ meeting on the last Friday morning of every month was initiated. 5-10 teachers have been participating in these meetings”.*

21: *“Problem-based learning (PBL) was established as a teaching method to support the students’ thinking and problem-solving skills as well self-oriented learning. The use of the PBL method was started in the laboratory course of industrial chemistry in 2004. Later on, after successful results in learning outcomes and positive feedback from students, it was also introduced in the Bachelor’s level laboratory course in the Process and products major. Recently PBL has also been implemented in a lecture-based course, in order to offer project work in groups as an alternative method for studying in addition to a traditional exam”.*

Research findings in the field of teaching and learning have enhanced the use of versatile teaching methods like PBL, group work, weekly assignments and learning diaries to activate students in constant studying and learning. The use of various learning and teaching methods should be supported by the Schools and the University.

18b: The School advisory board, consisting of staff members and fifteen industrial members within relevant industrial branches, industrial associations and financial bodies, is a constructive channel with which to collect feedback from the different stakeholders and to share information. The advisory board could be a useful reference group in the future curriculum development process.

The participation of staff members in engineering education research and in pedagogical conferences and who present research results enhances the development of teaching and learning methods. This is an example of best practice that could be extended in the programme, the School and the University for the benefit of the whole academic community.

4. Recommendations for improvement

The Programme needs to define its vision and strategy in education on a long-term basis to reflect the School's and University's research and education strategies. The process needs to be transparent and involve all staff, students and stakeholders to find a common goal.

- Define a line of command with decision making capabilities, command of resources, power of action, and well-defined responsibilities for everyone.
- Allocate resources directly to development of courses, pedagogical development, employment of teachers, and daily running costs for laboratory facilities. There is a need especially to highlight the role of Programme Director as the main officer for these actions and as a pedagogical leader.
- Teaching should be research-based and the interaction between research, practice and teaching should be an integrated base for education.
- Try to find forms where teaching achievements play a significant role in career development processes for researchers/teachers.

The Programme would benefit from diverse and systematic ways to collect and give feedback to and from students concerning the success of the educational programme, workloads, learning difficulties and obstacles, and practical matters concerning studies. Reflect on choices and possibilities at other academic institutions and their best practices. The accumulation of feedback should be complemented with systematic practices of curriculum development that involve all players in the field.

- The utilisation of feedback for development of course contents, learning outcomes, curriculum and learning environment should be transparent.
- The development work within the Programme could take advantage from the initiatives already made in chemical engineering educational research.
- Generate a constant form of communication between the Educational Programme and industry to reflect needs and expectations for future working life, and let the stakeholders be aware of the development actions.
- Enforce the interaction and collaboration of teachers throughout the curriculum.
- Reflect on choices and possibilities at other academic institutions and their best practices.
- Develop international teacher exchange in order to get input from good experiences and shared practices, and develop possible co-operation projects within the programme and with industrial collaborators. *
- The need for alternative teaching facilities should be examined. The Programme could benefit from on-location study places and innovative learning environments for students.

The curriculum development process and the role of different actors involved in it need to be clarified in the Programme and in the School. The role of important stakeholders in this process needs to be crystallized, since their input is essential for long-term quality assurance. The developments of the curriculum should also reflect the fact that all studies should present a meaningful entity.

- New pedagogical development of modules, and B.Sc. and M.Sc. programmes should actively involve teachers, industrial contributors, management and students. Possible employers could also be used as a reference group in the developing process.
- Continuous evaluation of courses and curriculum should be more directed to evaluation of teaching methods and strategies compared with the aims and goals of the course instead of the teaching capabilities of teachers. The present evaluation method via the electronic feedback system should be modified to meet these needs.
- The curriculum structure must be modified in order to support the students' mobility.
- The flexibility and the efficiency follow-up of the curriculum needs to be revised with respect to the defined aims and goals of the Programme.
- The connection between applied subjects and basic studies needs to be strengthened.

**There are probably sources for funding this.*

Material Science and Engineering

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The Panel finds that the Aalto University Programme in Material Science and Engineering (MSE) has a good reputation and fine traditions of co-operation with practice and other educational institutions and is, as such, considered a well-recognised programme in its field.

In the field of research and co-operation with practice, the MSE is considered to have strong research areas. The results of such research and findings form the foundation, in selected areas, of research-based teaching in corresponding study areas. The research areas have wide co-operation with practice, and many of the companies actively support Master's degree students by offering them the opportunity to prepare their theses within companies. Students graduating from this programme have been said to be attractive for practice. These students are highly employable.

Teaching in the MSE programme is characterised by having dedicated, motivated teachers. The teaching staff are able to use various teaching methods to the benefit of students' learning outcomes. One of these methods has been the integration of material science problems in basic studies. Another course, the introduction to the material science studies, has been developed on the basis of student feedback to the programme.

The teaching has been found to be innovative in some areas, as, for example, teaching has been carried out in small groups and by PBL methods, mainly on the Master's level, which has proven successful, and, furthermore, face-to-face feedback in sessions in the small groups is being used successfully. This face-to-face feedback has been recognised by students as being a very good teaching and learning method.

During the Panel's interviews, the students' competences and the study's relevance for practice were assessed by the industry interviewees as being good.

The "Teacher of the Year Award" is a good recognition of excellent teachers within this Programme/Department.

In the field of internal co-operation and social networking, the teaching staff have widely been involved in the self-evaluation report exercise and contributed with information and assessments. The teaching team has further been unified in developing and defining learning outcomes for some courses, and through this work shared their experiences.

It has been stated that within the research and teaching community there is an environment in which ideas can be discussed and developed. A good demonstration of this is the learning centre "Teemu Kerppu".

The students have, to some extent, been involved in developing the programme and they find it easy to access professors and teachers for discussions about their topics.

In the MSE Programme a great majority of the teachers have been involved in

various kinds of pedagogical training, which is stated in the self-evaluation report to have had a good influence previously on the overall quality of the teaching and learning environment.

It is found by the Panel through the interviews that there is a readiness for change, and there is awareness of the necessity of change and through this they have found motivation for improvement initiatives. This has resulted in an effort to create a Bachelor's degree programme which is more generic in its structure.

In the MSE programme, there have been initiated novelties in the area of ICT in teaching. One of these innovations has been the developing of teaching and simulation programmes, which, in many cases, can explain difficult issues in a pedagogical way. Students can access the programme at any time and the content can be seen as many times as needed to secure an understanding. In short, the programmes are explanations via ICT and are supplementary to the teaching. There is also expressed interest in joining forces to develop these methods across the programmes.

2. Evaluative feedback

The first grade is from the self-evaluation report; the second is given by the Panel.

a. Degree programme planning and management (questions 1-8)

- 1c: 2 (emerging) – how well the management's procedures support the degree programmes in achieving their objectives *Panel: 2 (emerging)*.
- 2c: 3 (good) – connecting research and teaching *Panel: 2 (emerging)*. *The reason for the lower rating is primarily because few actual contemporary teaching methods are used and, if then, only on the low end of the scale of the complexity.*
- 3c: 4 (excellent) – success rate for drawing up the outcomes. *Panel: 3 (good)*. *The Panel finds that there is still room and need for improvements. The learning outcomes are described only for skills. The Bologna Declaration talks about three areas: knowledge, skills and competences, which should all be described at each course/subject level.*
- 4c: 3 (good) – success rate for the course and module outcomes sustain the learning outcomes in the degree programmes *Panel: 3 (good)*. *The Panel finds that there is still room and need for improvements. The outcomes are described only for skills. The Bologna Declaration talks about three areas: knowledge, skills and competences, which should all be described at each course/subject level.*
- 5c: 2 (emerging) – success rate for supporting and monitoring students' competence developments. *Panel: 1 (poor) – 2 (emerging)*. *It is directly stated in the self-evaluation report that there are no clearly set supporting goals.*
- 6c: 3 (good) – success rate for study time allocation *Panel: 2 (emerging) - 3 (good)*. *The lower rating is due to the fact that the working load of students is 57 hours per week.*
- 7c: 2 (emerging) – mobility opportunities provided by the degree programme. *Panel: 2 (emerging)*.

There seem to be problems in defined responsibilities of different actors, for example the issue of defining the Programme Director's tasks, power, resources and competences with respect to the position within the Programme and in the framework of the whole School.

The connection of teaching with research seems to be a personal issue, and would benefit from a broader view and collaboration and interaction with industrial stakeholders. Practice-oriented and authentic learning environments, especially, could be formed and applied together with industry. This would also relieve some of the resource concerns involving the use of high-end research equipment in educational practices.

Linking individual educational elements to the larger context within the programme could be stepped up. A broader view of the whole Programme is needed to develop the curriculum beyond the separate courses. The timeline of subsequent courses and module components, especially, should be more integrated.

The Programme structure is very rigid without realistic possibilities for the students for mobility between programmes and between academic institutions.

The overall evaluation is 2 (emerging) - 3 (good).

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

9c: 2 (emerging) – integration of basic studies in the degree programme. *Panel: 2 (emerging).*

10c: 3 (good) – student guidance *Panel: 3 (good).*

11c: 3 (good) – success rate for supporting teaching *Panel: 2 (emerging). A formal teacher training programme should be initiated.*

12c: 3 (good) – suitability of teaching and pedagogical models supports learning outcomes. *Panel: 2 (emerging). Like in 2c: The reason for the lower rating is primarily because few actual contemporary teaching methods are used and, if then, only on the low end of the scale of the complexity of learning models.*

13c: 3 (good) – success rate of evaluation methods generating information for teachers and students on the intended learning outcomes. *Panel: 2 (emerging) - 3 (good), but with strong needs for improvements. The main factor is the widely used written examination, which will not be the aligned examination method when more complex teaching and learning methods are used. A variety of different evaluation methods is strongly recommended.*

14c: 2 (emerging) – feedback in practice. *Panel: 1 (poor). The feedback system does not work – in either way.*

15c: 2 (emerging) – state of resources: *Panel: 2 (emerging).*

There is little connection between the basic studies and the Programme, which makes the students less motivated about large loads of basic courses at the beginning of their studies. This also affects the transfer of knowledge from the basic studies to the MSE studies when it is needed later.

Preparing and supporting the use of personal study plans (HOPS) is vague, and this affects the students' progress in their studies.

There is a lack of systematic collection of feedback and there are no evident ways for its use for the development of curriculum or teaching methods.

The lack of resources is frequently stated in the self-evaluation report. The programme would require an allocation of resources in order to promote laboratory-based education. There seems to be a discrepancy here between the self-evaluation report and the interviews, since the latter did not indicate any great need for change in

everyday practices to carry out laboratory exercises in the research laboratories.

The overall evaluation is between 2 (emerging) and 3 (good).

c. Degree programme evaluation and development (questions 17-22)

17c: 2 (emerging) – collecting, processing feedback. *Panel: 1 (poor). See 14c.*

18c: 4 (excellent) – workplace and stakeholder feedback. *Panel: 3 (good) to 4 (excellent).*

During the interviews the students mentioned issues which had not been changed despite their feedback. (They referred, for example, to a greater use of PBL and problem-solving methods).

19c: 4 (excellent) – How co-operation between teachers is carried out. *Panel: 4 (excellent). However, formal biannual pedagogical meetings could be suggested.*

20c: 4 (excellent) – pedagogical competences of staff. *Panel: The formal information in the self-evaluation report indicates a high degree of pedagogical training among teachers. However, it is also stated that there are no official (University or School level) aims for the pedagogical competences of the teaching personnel. And there is a general problem with non-permanent teachers' pedagogical training. 2 (emerging) - 3 (good).*

21c: 3 (good) – how much learning and educational development is used in the development of teaching. *Panel: See 20c.*

Many teachers have formal pedagogical teacher qualifications or university pedagogical training. The interest in personal pedagogical training is also demonstrated by several educational surveys performed within the Programme. The overall curriculum development would, nevertheless, benefit from a more efficient and organized dissemination of experiences and survey results.

The connection between the Programme and industrial collaborators appears to be lively and fruitful, especially with regard to M.Sc.-level research projects and thesis work, but relies heavily on personal networks. A strategic step-up could be useful to integrate industrial partners more efficiently into the development of training in shared interest fields.

The overall evaluation 3 (good) according to the Panel.

3. List of observed best practices

Quotations are from the self-evaluation report.

a. In degree programme planning and management (questions 1-8)

2d: This is not an example as such. However, it shows that there are efforts to try to create interaction between teaching and research. This complies with some of the evaluation teams' recommendations for further increase in such co-operation.

5d: *"The students are asked twice during the course to make a self-evaluation of how they have achieved these goals."* The idea of having milestone activities in the course/project is a fine way to guide the students towards obtaining their goals.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- 10d: *“The information event for freshmen a few weeks after they have begun their studies clarifies the most important study issues. Although we offer orientation information right at the first days of the studies, there is such an “information flood” during the first few weeks at the beginning of the studies that repetition has proven to be important.”*
- 12d: *“The course MT-0.1007 “Basics of chemical thermodynamics” has changed four lectures to workshops. In the workshops student groups of four solve real industrial thermodynamic problems. The professor and the assistant are present in the workshops as tutors and mentors. The students get feedback and a mark for the solutions handed in. These marks are added to their marks from the partial exams. The main aim was to develop skills in solving difficult problems with incomplete and/or over-defined data and to become more fluent in discussing the problems in engineering terms.”*

c. In degree programme evaluation and development (questions 17-22)

- 17d: *“A good example of a successful (non PalauteOodi) method for collecting and utilising feedback is the course MT-0.2216 Unit processes and mechanisms. Student feedback is collected during the course in connection with lecture assignments. This has been seen to be an effective way to develop the course while it is still running. Students are motivated to answer, as they feel that they can influence the course. It helps the teacher to see whether the learning objectives have been reached as planned and to clarify things that have been unclear for the students.”*
- 19d: *“One example of joint course co-operation might be given by the course MT-0.2201 “Basics of Materials Chemistry” by two teachers. This course was developed jointly and started in 2006. As a result of co-operative work, a new method of collecting students’ feedback and their evaluation in the form of lecture diaries was implemented. Every student writes a one-to-two page summary of the lecture topics and submits it electronically to the respective teacher within two weeks after the lecture. Copying text/slides or inclusion of other text is not accepted. Instead, there is a requirement that the student will assess the subject critically, comment upon it and also give feedback to the teacher at the end, explaining, for example, how difficult this particular topic was to understand, how clearly the presentation materials were given, etc. The teacher assesses the diary, and the mark is given during the next week. Close co-operation between these teachers was required to correlate lecture materials, to develop joint and consistent evaluation principles (every period evaluated separately) as well as to integrate the total marks for students’ knowledge assessment for the whole course.”*

4. Recommendations for improvement

The programme needs to define its vision and strategy in education on a long-term basis to reflect the School’s and University’s research and education strategies. The process needs to be transparent and to involve all the staff, students and stakeholders to find a common goal.

- Define a line of command with decision-making capabilities, command of resources, power of action, and well-defined responsibilities for everyone.
- Allocate resources directly to the development of courses, pedagogical development, employment of teachers, and daily running costs for laboratory facilities. There is a need, especially, to highlight the role of Programme Director as the main officer for these actions and as a pedagogical leader.
- Teaching should be research-based and the interaction between research, practice and teaching should be an integrated base for education
- Try to find forms where teaching achievements play a significant role in career development processes for researchers/teachers.

The programme would benefit from diverse and systematic ways to collect and give feedback to and from students concerning the success of the educational programme, workloads, learning difficulties and obstacles, and practical matters concerning studies. The accumulation of feedback should be complemented with systematic practices of curriculum development that involve all the players in the field.

- Utilisation of feedback for developing course contents, learning outcomes, curriculum and learning environment should be transparent
- Generate a constant form of communication between the Educational Programme and industry to reflect the needs and expectations for future working life, and let the stakeholders be aware of the development actions.
- Enforce the interaction and collaboration of teachers throughout the curriculum.
- Reflect on choices and possibilities at other academic institutions and their best practices.
- Develop teacher exchanges in order to get input from good experiences and shared practices, and develop possible co-operation projects within the Programme and with industrial collaborators.

The curriculum development process and the role of different actors involved in it need to be clarified with the Programme and with respect to the School. The role of important stakeholders in this process needs to be much clearer, since their input is essential for long-term quality assurance. The developments of the curriculum should also reflect the fact that all studies should present a meaningful entity.

- New pedagogical development of modules, and B.Sc. and M.Sc. programmes should actively involve teachers, industrial contributors, management and students. Possible employers could also be used as a reference group in the developing process.
- Continuous evaluation of courses and curriculum should be more directed to the evaluation of teaching methods and strategies compared with the aims and goals of the course instead of the teachers' teaching capabilities. The present evaluation method via the electronic feedback system should be modified to meet these needs. The "new" system should focus on aims/goals and the learning strategy and not judge teachers.
- The curriculum structure must be modified in order to support the students' mobility.

The flexibility and efficiency follow-up of the curriculum needs to be revised with respect to the Programme's defined aims and goals. The reasons for the large number of drop-outs and slow graduation through-put need to be analysed.

Part B. Feedback and recommendations for the students of all degree programmes of the School

The recommendations are very general and should be seen as suggestions for improving the possibility of student input towards the developing of new teaching and learning methods, as well as towards the entire long-term quality assurance process of the programmes.

- The students should be more active in using the opportunities provided to give feedback. This could be encouraged, for example, by students' associations that take care of the first year students' tutoring by stressing the importance of giving feedback even when its outcomes are not immediately seen. The study advisors could also bring up this issue in their discussions with students and remind them of the importance of giving feedback.
- The students could also take more initiative in evaluating the progress of their learning by more actively using the opportunities to get feedback from teachers and reflecting on their learning process and possible improvements in learning methods. One way to do this is, for example, to go to look at the results after an examination and discuss them with the teacher.
- The student guild could create something like a guide to giving and receiving feedback which would be presented to new students and placed in an accessible and noticeable location (like the guild webpage). As the new students learn many working practices from older students, this will have a positive effect on students' awareness of the possibilities of giving feedback and its outcomes, as well as understanding the importance of receiving feedback from teachers and using it to improve one's own learning. Perhaps the organisation of the guild might be improved, strengthened and supported by the University.
- Students could make their own study visits to other universities (not only the universities of technology) in Finland or abroad and find the best practices for improving the learning methods/environment and evaluation strategies. The students would then have practical suggestions for the School, based on existing examples, and they might be able to implement some improvements even by their own initiative.
- A strategy for the long-term and short-term quality improvement of evaluation processes and feedback from the student point of view should be developed, as well as a corresponding action plan for the next year. Involve the guild closely in this process.
- The students (and the University) should actively find ways to support student exchanges with renowned Universities around the world and try to implement these studies in the curriculum in Aalto. This is not only a recommendation to the students but also to the University.
- The students should also try to push for transparency in learning goals and teaching/learning strategies perhaps in the line with the idea of constructive alignment. Perhaps the need of a more structured programme evaluation questionnaire from

students could be tested – not to evaluate individual teachers but to evaluate the programme courses in the perspective of learning goals and aims of the programme/ the main threads and so on.

- The students mentioned during their interview that they had been very happy with those activities in which they had been actively involved. This led to the conclusion that the students' representatives would have liked to have had more active learning. The Panel supports this wish, and recommends that the students take an active part in the process and bring this issue forward for the coming process of change.
- The guild is an active, qualified partner for the University in their process. It should be very active in forming teams to give input and participate in the process of change.
- The students and/or the guild should discover how the use of rooms and laboratories can be aligned to teaching, and how good learning methods are aimed for. But they should also find ways to support co-operation between University, industry and research.

During the interview with students they clearly stated that the suggestions for improvement described above are supported by all the students.

Finally, it should be stated here that the impression that the Panel got from the students was that they were very pleased with the Programmes at Aalto but the need for improvement is still there. We should also congratulate Aalto University on recruiting such good, ambitious students.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

General:

The School needs to define its vision and strategy in the long term (2020) both in research and education (including teaching and learning methods) following Aalto University's new strategy. The process of change needs to be transparent and to involve all the staff, students and stakeholders to find a common goal and to define common actions to reach the goal. Implementation of the strategy and actions needs to be reviewed and revised constantly.

The strategic actions need to be strongly supported for both education and research, and to have a defined line of command with decision-making capabilities, the command of resources, power of action, and positions with well-defined responsibilities.

The separation of actions and responsibilities between the School and the Degree Programmes needs to be clearly defined. This means that, compared with today, there must be an opportunity to take action at the Degree Programme level by the Head of the Degree Programme. They need to have allocated resources and should not have responsibility without resources. The self-evaluation report states that the Heads of the Degree Programmes have no resources allocated to them. They are administered and distributed by the Head of the School.

Feedback:

Generate diverse and systematic ways to collect and give feedback to and from students concerning the success of the educational programme, workloads, learning difficulties and obstacles, and practical matters concerning studies. Reflect on the choices and possibilities at other academic institutions and their best practices.

Use feedback for the development of course contents, learning outcomes, and the curriculum. The learning environment should be transparent.

Generate a constant form of communication between the educational programme and industry to reflect the needs and expectations for future working life, and let the stakeholders be aware of the development actions.

Mobility:

Create practical means to incorporate exchange study periods in domestic and international universities into the study plan and curriculum. Possible approaches could be combining B.Sc. and M.Sc. research projects and thesis work with international exchange.

Create easily accessible support services for student mobility with preconception towards one's own educational programme and department research profile. Use, for example, direct research group level connections to form opportunities for bilateral exchange.

Increase information on possible JOO studies and other exchange possibilities in other universities and make the curriculum flexible for them. Are there possibilities of collaboration with other technical universities in Finland?

Curriculum development

The curriculum development process and the role of those involved are not clear in the present organization. The self-evaluation document and the interviews clearly described this in many ways. The role of important stakeholders in this process is not clear, although the input from them is essential for long-term quality assurance. The Panel sees improvement possibilities through the following suggestions concerning these issues:

- Transparency – The new pedagogical development of modules, Bachelor’s programme and Master’s programme should actively involve teachers, industrial contributors, management and students. If any change is likely to be successful, there needs to be wide co-operation between all the parties. The best situation for change will be when there are bottom-up and a top-down movements joining to create change. So management means the University’s President, Vice Presidents, Deans, Heads etc. The bottom-up situation is established if there are teachers and others who actually want to participate in a process of change (for whatever reason) and in order not to be squeezed they need to have managerial support. So the two “parties” are here working together for a common goal. That is a good start for the forthcoming change. A possible employer could be a so-called reference group but must be involved in the whole developing process ⁵.
- The module system curriculum structure must be modified in order to support the mobility of students for studies in other Universities⁶.
- Continuous evaluation of courses should be directed more to the evaluation of teaching methods and strategies compared with the aims and goals of the course instead of teaching capabilities of special teachers. The present evaluation method/questionnaire must be modified.
- Develop teacher exchange in order to get inputs of good experiences/shared practices and develop possible co-operation projects.
- Possibilities of IT courses early in the programme should be considered. During the interviews teachers and students clearly stated that they had no formal knowledge and training in many of the standard programmes used today. This is a big drawback, as IT is the most important tool today for students and teachers as well. However, we can conclude that neither of them have sufficient skills at and knowledge of IT to be a useful tool in teaching and studies.

Resources:

The problem identified with non-defined resources for teaching and teaching facilities decreases the opportunity for constructive development of teaching methods, programme structure and other related issues.

Suggestions for improvement could be the following:

- One should try to allocate resources directly to the development of courses, pedagogical development, employment of teachers, lab facilities and so on. This

⁵ An external Advisory Board for each school?

⁶ Credits for studies at other universities must be given so that they match the module in the Aalto system. Otherwise, students will be punished by not having credits for their studies outside Aalto, and this can result in prolonged study time.

is based on the fact from the self-evaluation report and the interview that there is a wide use of external teachers, which we foresee as a drawback, as they are not employed as permanent teachers and as such they are not part of institutional learning and development, because they come and go according to their teaching tasks. And they will probably not get any formal training either.

- One should try to allocate resources to the programme director for short- and long-term development of teaching and learning.

Teacher training and teaching/learning

The need for teacher development has been expressed by both teachers and students.

The following is suggested by the Panel:

- Try to find forms where teaching achievements are a part of the career development process for researchers/teachers and other personnel.
- When new researchers are being recruited, their teaching ability must be evaluated.
- Pedagogical development (through courses and conferences) should be encouraged.

Part D. Observations on the evaluation process and recommendations for improvement

The visit to and the evaluation process at Aalto University in the period 10/4 to 15/4 in 2011 was a very informative, professional and effective work process for the Panel. We have great faith in the Aalto University initiative in the evaluation of the programmes and the education process. We really appreciate the ambition and eagerness of Aalto University to improve the quality of the learning and education strategies.

Information about the process and material needed for the evaluation was very efficient and the material was distributed according to the time allocated to the process. The material was clear even though the self-evaluation reports could have been somewhat more extensive and thorough. This may be due to the tight schedule for the Programme Directors, Heads and so on. This was also apparent through the interviews during the stay. Contacts with all the organization team at Aalto University worked almost perfectly and the administration was very effective with quick responses to questions and so on.

Some of the material was unfortunately only in Finnish, which to some degree was difficult for the Panel, as much important information was actually not accessible until our Finnish colleagues could help us.

The information transmission for the Heads of teams was very informative and very helpful indeed for the further process. The information given was explicit and it made a clear focus on what was expected from the teams.

During the week we had time to interview the most important stakeholders of the Programmes. The time for the interviews was sometimes somewhat short but that is the way it has to be.

The final meeting with the Chairs of the Panels was slightly late in the process, but still it was good to have a chance to speak with the Chairs and the administration before the last hectic day. It should be mentioned that the informal breakfast meetings with the Chairs was very informative and effective.

Final conclusions

Even though some minor mistakes occurred during the visit, the Panel's general impression was that it was a very ambitious, professional and sincere effort from Aalto University to investigate possibilities of improving of their programmes.

Based on the presentations and the reactions to them from the Aalto University leadership, the Panel finds, that there is a willingness to use the results from evaluation reports as a tool in the further process of reaching its ambitious goal for the University in 2020. All the final presentations pointed in the same direction and all focused on the same common major topics. The work by the Panels can obviously be used as a powerful tool to reach the goals, as there is a wide consensus in their findings.

Appendix A3

The School of Economics

Accounting, MSc

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The Panel appreciates the Department's efforts that were put into designing and implementing the curriculum of the MSc in Accounting, and recognizes that the Accounting Department for the following things:

1. It prepares the Aalto School of Economics MSc in Accounting students well for their professional specialist designations as CPAs for primarily Finnish society;
2. It provides expert inputs and guidance on Finnish accounting standard settings and service on professional service bodies;
3. It is successful in recruiting Finnish students to the ASE (Aalto School of Economics) Accounting, Finance & Business Law, BSc programmes and in retaining them for the MSc in Accounting programme;
4. It fulfils the MSc degree recruitment requirements of the prestigious Big Four accounting firms for their Finnish operations for internship positions, part-time jobs and, after graduation, entry-level positions.

A number of issues, however, emerged in our reading of the MSc in Accounting degree programme's self-evaluation report.

1. There is a total absence of Bologna thinking in the MSc in Accounting's degree intent and aims. For instance, the use of a quota system to link the BSc and the MSc programmes is contrary to the Bologna intent. We cite "...because of scarce resources and maximum quotas for the number of students accepted.....access of these students (the Open University or other Aalto Schools) to the advanced level courses in the MSc Accounting programme cannot be granted unless these prerequisites are met" (self-evaluation report, page 9, par. 7e).
2. The statements in the self-evaluation report regarding the main management procedures of the degree programme and regarding the particular areas of success are almost openly hostile to the Aalto and Bologna vision.
3. The lack of external benchmarking for curriculum planning to create world-class CFOs is seriously worrying and the lack of awareness of the curriculum needs for the entrepreneur/CFO/general manager career path signals tunnel vision when one is creating CPAs and competent auditors for local Finnish companies.
4. The programme management needs to ask for broader inputs from all relevant and appropriate constituencies (including alumni, faculty, staff, and the small and family business community) and to widen the horizons to service not only Finland but the global market place.
5. The Panel also perceived a certain resistance to change and lack of leadership in programme management according to the Aalto philosophy.

The Accounting Department is and will remain a stronghold for the Aalto School of Economics and its programmes, and should, therefore, identify and embrace the room we see for cross-disciplinary links with Business Technology, Financial Information Systems. It has to be able to strengthen the skill and relevant mindset of combined CFO/Accounting/Controller/MIS roles (Accounting as “Business Partner”). A strong Accounting Department with a focus on the international, global business environment is essential for the long-term success and credibility of an economics and business school, as accounting programmes should offer its students a relevant set of technologies that help co-design and co-create and, hence, enhance the value creation part of the business model: accounting skills in the broad sense are means, not ends, to further the business model.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

See above

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Poor to good:

1. The danger is clearly that there will be no envisioned changes initiated by the Accounting Department in teaching methodologies, formats, or modules without resources and “rescue” from higher management: “It is not reasonable to expect the same courses are offered in different teaching modes to fit the tastes of different students” (page 19 of the self-evaluation report).
2. Systematically working with structured pedagogical approaches to teaching is not present, but the Panel sees noble experiments by individual teachers who are doing their best to stimulate the learning curve, albeit rather “ad hoc”: “It is hard to imagine how artistic activities could highlight problems in accounting” (MSc in Accounting Self-evaluation report Ch. 4, p. 20).
3. On collaboration with other disciplines within the Aalto School of Economics and with disciplines of the other Aalto Schools, we cite the reaction of the Accounting Department: “To meet yes, to collaborate perhaps, from basic principles of each discipline: mission impossible!” (Self-evaluation Report, page 20). This attitude is clearly in conflict with the Aalto vision.

Although the Panel appreciates that the Accounting Department will need extra resources to implement the teaching objectives in line with the Aalto vision and strategy, the ambition to recruit internationally, which is absolutely necessary, requires no direct extra resources but rather a change in attitude and in programme development. Otherwise, attracting world-class faculty will be problematic (see self-evaluation Report, p. 14, item 15e).

c. Degree programme evaluation and development (questions 17-22)

The Panel wants to stress the following:

1. The evaluation assessment criteria for this MSc in Accounting degree programme have to be international benchmarks.
2. The development of the MSc in Accounting programme has to come from dialogue with a broader external stakeholder base.

The sophistication of course evaluation methods was rather disappointing: using a two-criteria measure on a statistically insignificant data sample, due to apathy on the part of students to even fill in the course feedback assessments, will never work (see self-evaluation report, p. 15, item 17d). The view of the utilization of stakeholder feedback (see p. 16, 18e, “Henry Ford” example) is equally disappointing. The Panel is, therefore, seriously concerned about the apparent difficulty of having a continuous conversation with the business community about developments in the field on the basis of qualitative dialogue and systematic surveys: “We give our graduates intellectual frameworks and understanding which are not likely to “rust” - which have more universal appeal than the next urgencies and fashion winds that sweep over the mindsets of our stakeholders.”

The Panel has the strong impression that the Programme group of the MSc in Accounting is the same one as for the BSc in Accounting, Finance & Business Law. The danger here is the tunnel vision, navel contemplation and the view that “everything is fixed for five years with a guaranteed pipeline of students”. The Finance Department takes a completely opposite view (see self-evaluation, item 19b for both the MSc in Accounting and the MSc in Finance degree programmes).

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

None.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The Panel detected individual pioneering in joining the international teachers’ programme and starting learning diaries in, for example, capital budgeting and corporate governance courses. The Accounting Department should implement this throughout the Department and implement more systematic, continuous, professional development.

c. In degree programme evaluation and development (questions 17-22)

None.

4. Recommendations for improvement

The Panel highlights and strongly, even urgently, recommends the following “sine qua non” actions:

1. There should be a serious “reality check” by the Department and Programme Committee: the Bologna philosophy needs to be implemented.
2. The Department (and, by implication, the accounting discipline) should proactively prepare and outline its role in the new Aalto School of Economics: a broad and new BSc programme is to be launched in 2013 and the Accounting Department cannot afford not to significantly contribute to this new BSc programme, as the accounting disciplines are and will remain essential to any meaningful BSc programme in business and economics.
3. A “stand-alone” MSc in Accounting programme capable of recruiting faculty and students internationally is urgently needed.

The Panel fully acknowledges the fact that the Accounting Department and its faculty members are facing a tough recruiting environment for a top research and teaching accounting faculty. The lack of vision on a truly international, research-driven and business-world-tailored MSc programme and the consequential procrastination of the design and implementation of such an MSc in Accounting will only make matters more difficult in the future.

Accounting systems and knowledge of financial and cost accounting are fundamental to business. The Department of Accounting needs to create more opportunities for its faculty, students, and alumni to interact with others in the larger Aalto community. In this way, accounting can contribute to leading and creating value in innovative and creative collaborations and networks which would further enhance Aalto’s prominence, not only in Finland, but globally.

Accounting, Finance and Business Law, BSc

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The Panel would like to praise ASE for admirably combining the disciplines of Accounting, Finance and Business Law into a multidisciplinary Bachelor's degree programme. We clearly see strengths in the cumulative structure and rigour of the programme. We also appreciate the experience of the teachers who have planned the sequence of courses, based on their research interests and business experiences in finance, consultancy, professional societies, arbitration panels, advisory boards, or boards of directors.

Finnish society and leading companies perceive the Bachelor's degree as providing both fundamental skills and the knowledge required of financial, accounting, or business law majors who go on to gain an MSc degree in their specialities.

The responsible faculty members have also developed a coherent minor consisting of a "package" of 30 ECTS credits designed either for ASE students in these three disciplines or for those Aalto University (AU) students in other fields who wish to widen their horizons about finance, accountancy and business law and who wish to acquire tools and skills in these fields.

The combined five-year BSc plus MSc in Accounting prepares Finnish students as specialists capable of eventually attaining the Finnish equivalent of the CPA and other advanced professional accreditations.

However, we are concerned that the current three-year Bachelor's degree may not meet Bologna criteria for an independent Bachelor's degree that produces graduates who can be employed readily by Finnish society.

We would encourage more dialogue on how this Bachelor's programme can add its strengths to the new ASE Bachelor's degree discussions underway in Aalto. (Refer to the overall Panel's recommendations to AU and see 4. RECOMMENDATIONS FOR IMPROVEMENT on the last page of this report.)

The programme management have solicited external stakeholder feedback but it appears to us they are clearly focusing primarily on the Finnish Big 4 accounting firms to learn the accounting needs of their graduates. However, part of the Aalto mission is for the Bachelor's degree to supply both specialists as well as entrepreneurs. We think the entrepreneurial portion of the preparation needs to be strengthened.

The student feedback cycle is not closed. There is no attempt to get proper feedback on a relevant or significant scale other than the standard ASE system, which is not working. We did not see evidence that the programme communicated back to students the ways in which they use or plan to use student feedback to enhance and develop the programme.

Student-centered learning is still emerging, partly constrained by large class sizes.

We do not see the hooks between the silos and departments on a programme level or Aalto level. There are glimmers of hope, however. The faculty's pedagogical skills and self-initiative to further improve their capabilities is there.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

See above

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

See above

c. Degree programme evaluation and development (questions 17-22)

See above

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

None.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

There are learning diaries and quick feedback on the students' learning notebooks in two courses. (See self-evaluation report comments on the capital budgeting and corporate governance course initiatives.)

c. In degree programme evaluation and development (questions 17-22)

None. We are unclear about how it is done. Reaction on the part of some programme members in dealing with the ambiguity of Aalto guidance is to hesitate and wait.

4. Recommendations for improvement

As we said earlier, we are concerned that the current three-year Bachelor's degree may not meet Bologna criteria for an independent Bachelor's degree that produces graduates who can be employed readily by Finnish society.

The programme management have solicited external stakeholder feedback, but it appears to us they are clearly focusing primarily on the Finnish Big 4 accounting firms to learn the accounting needs of their graduates. However, part of the Aalto mission is for the Bachelor's degree to supply both specialists as well as entrepreneurs. We think the entrepreneurial portion of the preparation needs to be strengthened.

The student feedback cycle is not closed. There is no attempt to get proper feedback on a relevant or significant scale other than the standard ASE system, which is not working. We did not see evidence that the programme communicated back to students the ways in which they use or plan to use student feedback to enhance and develop the programme.

Student-centred learning is still emerging, partly constrained by large class sizes.

We do not see the hooks between the silos and departments on a programme level or Aalto level. We would however like to recognize the faculty's pedagogical skills and self-initiative to further improve their capabilities.

Realizing that the Bologna Master's is going to happen in 2013, we invite the multidisciplinary leadership team of this BSc to articulate their role in the new ASE Bachelor's degree, where they can create a new mindset on the part of young entrepreneurs about the value creation role of best practices in law, finance, strategy, and new product development as per the Aalto vision.

Decide about the strategy and positioning of the BSc, and about how finance, accounting, and business law will contribute to a distinctive Aalto Bachelor's degree, a differentiated ASE Bachelor's degree, as well as continuing to serve the needs of the local Finnish business community.

Business Law, MSc

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The Panel wishes to congratulate the Programme Director and the Business Law faculty for the effort put into designing and implementing the curriculum of the MSc in Business Law and for their efforts to offer the Aalto School of Economics students the high quality education they receive.

The MSc in Business Law programme is a specialized Master's degree that mainly draws on the intake of ASE's Accounting, Finance & Business Law BSc students (a relative small quota of a maximum of thirty students) and on external applicants. (This year, there were 76 applicants, out of whom a maximum of ten could be selected for the MSc in Business Law).

1. The MSc in Business Law conforms to Bologna requirements, be it only in a narrow, Finnish national context. (See further comments on this point below and in our Recommendations.) The Business Law faculty and staff fully realize that they could serve the broader Aalto community in a much better way. The Bologna process and the Aalto integration are, therefore, seen as opportunities. The Business Law faculty has a clear view on cross-fertilizing with other Aalto departments and programmes, e.g. the Industrial Engineering & Management Department and the Aalto School of Art & Design's various education programmes (IDBM and so forth). The view adhered to by the faculty is articulated as "focusing on the added-value of Business Law to business", rather than just focusing on the factual "traffic rule" approach as referred to in the self-evaluation report.
2. The Business Law faculty (teachers and researchers) sees huge opportunities in strengthening engineering, art and design students' profiles by offering relevant courses focused on key issues in business law practice areas, for example, patent law, intellectual property rights, competition law, contract law, and business commercial law related to creating value through strategic alliances, joint ventures, spin-offs, insolvency (bankruptcy) proceedings, etc. The faculty is open to the opportunity of delivering added-value to the "new style" BSc and to diverse Aalto MSc programmes across the whole University.
3. With respect to research, the Business Law faculty already has a project running with Aalto EIT Knowledge & Innovation Community ICT Labs on market structures, alliances and partnerships and they have created their own collaboration with the University of Applied Arts.

4. The faculty is also in continuous interaction with external stakeholders. It has close contacts with and experience in relevant industry and business practices (through consulting and arbitration panels) and seeks (inter)national contacts with academia and practising legal specialists. The faculty is willing to listen to and to engage in dialogue with business and industry, tax experts, practising attorneys, students, and alumni. The Business Law faculty clearly unfolds a well-argued strategy of opening up Business Law topics, problems and issues to a wider audience, and integrating legal thinking into a multidisciplinary AU curriculum that goes well beyond accounting and finance.

We conclude by observing that the Business Law faculty and staff are fully aware of the challenges they face and have a view on how to further deploy their education and research competencies. They are, however, highly uncertain as to the possibilities and resources they will be offered to be able to “spread their wings”. The Business Law faculty is housed in the Department of Accounting, which the Panel fears may be too narrow a base to unlock its potential and strengthen its position on the Aalto level. A deeper collaboration, possibly with the Law faculty of Helsinki University, and wider cooperation with other national and – even more importantly – international institutions is a real “must” if Business Law at ASE is to grow and broaden its competencies and future scope of activities.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Excellent: See above.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good to Excellent: See above.

c. Degree programme evaluation and development (questions 17-22)

Excellent: See above.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

See above.

The faculty and staff of Business Law appear to be actively seeking to complement their expertise with respect to teaching, curriculum development, and research by finding opportunities for cross-fertilization or multi-disciplinary engagement with other Departments or Schools, both at the ASE level and at the AU level and at other universities in Helsinki and Finland.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

See above.

Given the small scale of the Programme, the faculty must make use of experienced practitioners for specialized courses such as Intellectual Property Rights. The failure to hire a permanent person to staff such an important position perhaps suggests to the Panel a structural weakness or lack of attractiveness in joining the Business Law programme. This gap ought to be addressed at both ASE and AU levels of discussion.

c. In degree programme evaluation and development (questions 17-22)

See above.

The Business Law faculty and staff are willing to listen to and to dialogue with industry and business, alumni, students, and with faculty and researchers from other Schools both inside and outside Aalto.

4. Recommendations for improvement

The Panel would like to stress and repeat the following elements that have already been emphasized in the previous sections:

1. The MSc in Business Law conforms to Bologna requirements, be it only in the narrowest sense: the programme will have severe difficulties to attract international students, unless an international MSc in Business Law becomes a strategic choice of AU. This is only viable in a broader cooperation with Schools and Faculties outside Aalto – and even outside Finland. The alternative “growth” model will involve the offering of Business Law courses to students of other Aalto Schools and a strong position of Business Law in a broader BSc programme (which is a line of thinking the Panel would advocate).
2. The Business Law faculty see and want to embrace the huge opportunities of strengthening engineering, art and design students’ profiles by offering relevant courses focused on, for example, patent law, intellectual property rights, competition law, contract law, and commercial business law pertaining to creating value through strategic alliances, joint ventures, spin-offs, insolvency (bankruptcy) restructurings, and the like. The Panel would recommend this avenue. A more independent position of Business Law would be necessary (i.e. we doubt whether the Accounting Department is the most appropriate “home base”) in this setting. The “spreading of wings” will also – if enabled and given the appropriate resources – resolve the (student and faculty) scale problem.
3. A continuous and stronger interaction with external stakeholders, both national and international, and wider contacts with relevant industry and business partners (i.e. global international law firms) is a clear must. Furthermore, the programme would benefit from national and especially international benchmarking as a standard approach to curriculum development;
4. MSc in Business Law graduates are in strong domestic demand. The current lack of an international – or at least a European - Business Law focus leads to a rather low degree of employability for graduates on the international labour market. If

not mitigated, this will certainly be a missed opportunity and even a threat for the further development of the programme in the international academic education market post-Bologna.

5. Finally, as has already been said, the faculty and programme staff are fully aware of the challenges they face and have a view on how to further deploy their education and research competencies. They are, however, highly uncertain as to the possibilities and resources they will be offered to be able to “spread their wings”. The Business Law faculty is housed in the Department of Accounting, which the Panel fears may be too narrow a base to unlock its potential and strengthen its position on the Aalto level. A deeper collaboration with the Law Faculty of Helsinki University is a clear possibility. We also recommend more intensive cooperation with other national and – even more importantly – international institutions as a real “must”, especially if Business Law at ASE is to grow further. We see ample room for the MSc in Business Law Programme to broaden its scope, range of activities, and core competencies.

Business Technology, BSc and Information and Service Management, MSc

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

Because of the close relationship between the two programmes, the Panel decided to report on these two programmes together.

- Willingness to engage change
- Willing to introduce change
- Interdisciplinary approach
- Willingness of students to support the programme
- Interest from overseas students
- Effective use of student representatives (KY PISTE) where students can see evidence of their comments being fed back into curriculum development
- Accommodating student learning
- Working students present a challenge, but the Team recognise the pressures on the students and appear willing to consider moves to even greater flexible learning delivery
- Openness of the Team to try and develop new ideas
- Collaboration between Bachelor's and Master's programmes/sharing of good practice.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Overall: good

The factors justifying the overall good evaluation, or denying the excellent are the following. On the positive, supporting side, the programme requires students who lack the basic skills to enter the Master's programme to take bridge studies, courses from the Bachelor's level, during the first year before actually starting the BSc studies. In addition the strong workplace connections and work-based experiences in learning support the teaching. On the other side, the inter-university mobility needs to be made more flexible to support multidisciplinary courses. In addition, the programmes realize the poor student-teacher ratio, and the need to find out where graduates are employed and to use the alumni in course/curriculum development.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Overall: good

The factors justifying the overall good evaluation, or denying the excellent are the following. The basic fundamentals in business studies seem to aim for basic, interdisciplinary knowledge, which reflects the Aalto widening of learning experiences. Improvements need to be focused on technical support (i.e. printers and IT facilities) in learning, and the clarification of the personal skills portfolio aims and content. In addition, basic research methodology is lacking to some extent at the Master's level. In addition, teacher tutoring needs to be improved; there might be a cultural block to ask for assistance, as the meetings are on an as-needed basis (except one meeting). Extremely positive are the exploratory and innovative teaching methods used, and the willingness to expand in this area.

c. Degree programme evaluation and development (questions 17-22)

Overall: good

The factors justifying the overall good evaluation, or denying the excellent, are the following. The programmes have close co-operation with businesses, especially in organizing the summer programme. Feedback is collected, and utilized, from stakeholders and students. The WebOodi is inefficient; instead, course-specific student reps are used. The staff is eager to develop and experiment with new teaching and learning techniques, and the students respond to them well. There is doubt whether the senior/current staff will be motivated to engage in new teaching methods.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Summer programme
- Workplace connections
- Good examples and self-reflection.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Student representatives
- Experimentation on learning pedagogies.

c. In degree programme evaluation and development (questions 17-22)

- Use of the EDGE system (Electronic Decision-Making And Groupwork Environment)
- Effective student feedback
- Workplace connections.

4. Recommendations for improvement

1. Define the kind of jobs a Bachelor in Business Technology will get and from there define learning outcomes for the Bachelor's programme.
2. Consider the impact that the Bologna process will have on repositioning both Bachelor's and Master's programmes, where possibly the Bachelor's programme will become an even more attractive exit route into jobs.
3. Organise a systematic feedback from alumni and employers on the curricula of the different programmes; it is clear that both alumni and employers (many are both) are more than willing to engage with the programme if asked.
4. Invest in real student-centred learning (especially in larger courses); undertake a training programme to clearly explain what is meant by and what the implications are to resources of becoming a student-centred learning institution.

Communication in Business and Economy, MSc and International Business Communication, MSc

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Overview

The International Business Communications and Communication in Business Economy Master's programmes are in the process of merging and redeveloping into a new communications and media offering within the next two years. Consequently, the Panel decided to report on these two programmes together. The two teams seem excited by the opportunities presented by the Aalto context and their future merger. The programmes benefit from a strong interest in student-centred pedagogies. The programmes share a strong international dimension with good links for studying abroad.

Strengths

- Both programmes have an optimistic view of the 'Aalto' promise, viewing the potential for multidisciplinary collaboration positively.
- Both programmes provide a personal and close-knit supportive environment in which their students feel valued as individuals and able to engage with a student-centred learning approach.
- These programmes, together, engender the most positive student feedback in terms of support, enthusiasm and motivation. Both programmes perhaps benefit from their small size and, consequently, small class sizes that support a more interactive teaching style with varied assessment tasks and personal feedback.
- Co-teaching is used as a way to strengthen teaching provision and disseminate teaching practices and pedagogical understanding, particularly with PhD students.
- The programmes appear to have strong links with industry.
- Both programmes have an Advisory Board with students, alumni and faculty.
- Students are encouraged to take up excellent credit-bearing international study/work placement opportunities both within and outside the EU.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Good

- A common School framework is used across all programmes.
- Programme Directors appear to have responsibility for quality but lack decision-

making authority in terms of resource allocation.

- Academic leadership in times of uncertainty and development requires resourcing and recognition to steer and operationalise change; this seems to be an issue and may undermine good programme management and staff morale.
- Programme coherence requires further development in terms of both aligning programme and course outcomes and assessment.
- Course learning outcomes require more specification, alignment with level, alignment with assessment, and with programme learning outcomes.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good

- Teachers are committed and enthusiastic and the programmes demonstrate many examples of innovative learning and teaching.
- Quality assurance of assessment standards and feedback is embryonic; there is no moderation/second marking of student work.
- Most teachers are certified in pedagogy.
- Some practical issues still challenge Aalto mobility including bureaucratic application processes in other disciplines and in terms of lack of space for students coming from other programmes. Aalto mobility is compromised by resources that do not follow student numbers.
- Staff are expected to maintain excellence in teaching, research and programme management, and this overloads individuals and damages staff morale.

c. Degree programme evaluation and development (questions 17-22)

Good

- The new Aalto context is perceived with enthusiasm as it offers these programmes a more visible position within the University as communication is seen as the foundation stone of the Aalto concept. The potential for Communication students to take a wider range of minor subjects is also welcomed.
- The team has good connections with industry and informal feedback is used to develop courses.
- Co-teaching allows cooperation between colleagues in the planning and implementation of courses.
- The centralized online feedback system is not working well; response levels are low.
- Curricula development and teaching is under-resourced.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

Close-knit team with an enthusiastic approach.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The 'Communication Student Club' is appreciated by students as a way of engaging with other students and staff.

The Programme Director of the Communication Business and Economy programme supports new teachers in gaining understanding of academic standards through blind marking of coursework (new teacher and Programme Director separately) with subsequent discussion.

c. In degree programme evaluation and development (questions 17-22)

4. Recommendations for improvement

Within the new combined programme, resource and rationalization decisions are required. The Panel is confident in the programme teams' abilities to benefit from merger synergies. Positive but realistic attitudes will underpin the process.

- There is an opportunity to embed current good practices from both programmes such as IBC's Advisory Board.
- Whilst the programme teams have access to relevant and appropriate IT resources, they need training and support to make the best use of these facilities, especially film and sound editing.
- Student entry requirements in the new programme must be considered particularly given the possibility of varied, prior experience and knowledge to support an appropriate programme design.
- To enhance teaching it is recommended that the Aalto Management consider ways to value and resource teaching. The Panel would strongly recommend a teaching tenure track in which excellence in teaching can be encouraged through recognition and reward.
- To ensure programme coherence it is recommended that the new programme articulates course learning outcomes more specifically in terms of what students are able to demonstrate, and that these outcomes align to programme level outcomes.
- One should consider how to improve the sequential progression of the programme through a tighter system of pre-requisites.

To assure the quality and standards of the courses offered it is recommended that the programme includes the following:

- There should be formal processes that assure the quality of grading.
- Whilst feedback processes are generally very good, consideration should be given to student engagement with their feedback.
- Assessment should avoid excessive pressure points by having carefully considered scheduling.
- Given that mobility across the Aalto campuses creates logistical problems, consideration should be given to repeating popular courses.

For the programmes to benefit from increased student numbers from other disciplines Aalto needs to ensure that resources follow students.

- Finally, the School and Programme would benefit from increased compulsory pedagogical training for all new staff and from updating experienced colleagues from a dedicated School teaching and learning expert. This person may sit within a central Aalto unit but with a direct link to the School and be responsible for the

design and delivery of continuing professional development discussed in yearly appraisals.

Economics

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Owing to the close relationship between the BSc and the MSc in Economics programmes, the Panel decided to report on these two programmes together.

- The Team need to be congratulated for their detailed evaluation report, taking in a wide variety of views
- Favourable support from the *external accreditors* (external examiners)
- Collaboration between the BA and Master's degree programmes/sharing of good practice
- Use of external stakeholders as well as students in contributing to the programmes
- A team with varied skills and teaching methods
- Engagement with outside bodies
- Prepared to experiment with different teaching methods
- Reflects the University 2020 goals
- *Research-Informed Teaching.*

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The Department gains from being well-established with a long tradition of producing excellent students. It benefits from well established links with two other notable economic institutions (the University of Helsinki and the Hanken School) which appear to work well for faculty and student.

The members of the Panel responded positively to the application of economics research in the real world and recognized the opportunities to more overtly connect with what is called "Artistic Activity" and Technology. This connection is further supported by external guest lecturers, though it was conceded that they were selected from a rather narrow economic base and the students might benefit from a more eclectic choice of guests.

It is currently understood that the programme outcomes of the BA are essentially to equip the student with the entrance requirements to the Master's programme and that, in turn, judgments are made on Masters' outcomes. The impression remains that a student not proceeding to a Master's degree is, in some way, a failure, and that the Bachelor's degree is not an entry to the labour market (as Bologna wants). There is a concern that even the BA outcomes in maths can be insufficient to support the progression to a Master's degree. Of greater concern is the skill level of external students coming to the Master's outside ASE (Aalto School of Economics).

The programme is mostly oriented for students to become researchers, although many of the students will get other jobs. The programme itself thinks of splitting the Master's programme to adjust for these different groups.

The team provided convincing arguments to support the fact that learning outcomes are defined for all courses and modules. However, the input from the world of practice (alumni and employers) could be strengthened.

Supporting the Competence Development of Students is perceived as a weakness of these programmes; not the provision of *knowledge* but the *competences* to underpin that knowledge. The Faculty acknowledged the potential of, for example, the PDP to support and enhance learning, but felt that those who might best support the initiative were not provided with sufficient resources to make it happen effectively.

The staff perspective is that the workload is acceptable for the students; it is a difficult and valued programme at the BA and MSc levels. But help can be given by planning assignments and hand-in dates etc. Some thought might be given to using a mechanism similar to the "Maths Camp" to help students make the transition to Master's when and where required.

The programmes have excellent opportunities that fully support international mobility. An opinion expressed to realize synergy potential with economics taught elsewhere in Aalto.

Overall: good

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The structure of the common core/basic studies has received good feedback from a variety of external sources. However, the use of a real portfolio to 'show' the results of some of the basic studies would enhance this. Furthermore, the groups in the basic studies are large, so interactive learning methods are seldom used.

Mechanisms for student guidance and counselling are in place but students do not use them. Possibly the programme makers need to examine and redefine what they consider would be good practice to entice the students to realize their worth and participate in them.

With respect to support for learning and providing feedback, a similar response to the above can be given, but consideration needs to be given as to when feedback might be taken during programmes, thus providing on-going support to the learning experience

It was encouraging to find a range of teaching methods being used at both levels of the degree, but there is a need for these ideas to be disseminated to colleagues. One suspects that traditional "chalk-and-talk" (in PowerPoint) is still the prevalent method for dealing with large numbers; relevant case materials support the learning experience.

Evaluating learning seems to be Faculty-based, with limited opportunities for students (and alumni) to engage.

Whilst there is evidence of feedback in thesis development, across the programmes it is patchy and dependent more upon the commitment of the individual tutor rather than at the end of a programme. There appears to be no formalized requirement for staff to do so in the spirit of enhancing learning.

Evidence suggests the pressure of larger student numbers is placed on teaching resources and, in particular, specialized computer-based packages for student use. (Are there licensing issues for use at home?) Otherwise, this is considered a prime asset for

the programme.

Overall: good

c. Degree programme evaluation and development (questions 17-22)

The utilisation and impact of student feedback needs attention and it is necessary to convince students of its worth in the learning process.

Evidence of involvement, but this would benefit from at least creating a database to share contacts; they are currently ad hoc and reliant upon individual initiatives. They could be more systematic and built into curriculum development and delivery (and assessment).

Co-operation among teachers seems to be a strength of the team.

With the emphasis upon research/tenure, to what extent are staff (especially new staff but not only them) introduced to L&T developments that might assist the large group teaching the faculty to face challenges in delivery flexibility as well (for example)? The continuous learning in this respect is too voluntary. (There is no incentive or directive.)

The Panel gained the impression that the research is related to learning, but there are possibly only isolated examples then of how that manifests itself in educational developments.

Overall: emerging

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Collaboration with the University of Helsinki
- New HECER Master's degree for ambitious students in collaboration with the University of Helsinki.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Use of databases in courses to train skills.

c. In degree programme evaluation and development (questions 17-22)

- M.Sc. theses as assignments for the research institute
- Long-term co-operation with the University of Helsinki.

4. Recommendations for improvement

1. Define the kind of jobs a Bachelor in Economics will get and from there define learning outcomes for the bachelor programme.
2. Consider the impact the Bologna model will have on various current practices.
3. Research the kind of jobs a Master in Economics will get (besides a researcher) and decide whether separate programmes are needed.
4. Improve the feedback process on courses (also during courses).
5. Organise systematic feedback from alumni and employers on the curricula of the different programmes.

6. Allocate time for staff to take part in pedagogical training, especially new staff with no experience of teaching such as planning a lecture through to marking assessments.
7. Invest in real student-centred learning (especially in larger courses); undertake a training programme to clearly explain what is meant by and what the implications are to resources of becoming a student-centred learning institution.
8. Improvements in tutoring in order to achieve more efficient student guidance in studies and learning. (This applies on the School level to all Departments.)

Entrepreneurship, MSc

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

One has to remember this is a new programme with limited evidence:

- There is research into pedagogy/entrepreneurial pedagogy.
- It claims to be different from global competitors, but this needs to be substantiated. Different does not always mean better.
- It provides hands-on skills (*but this is disputed by student hearsay*).
- Students are encouraged to engage in “real life examples”, such as the project in (rebuilding) Haiti.
- Reflective in action/practitioners/work as a Team.
- It is willing to engage with other programmes.
- Research (into learning) is linked to teaching.
- Tutoring and learning student reflection diaries for evaluation.
- Use of *Research-Informed Teaching*.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

This is a very new, small programme with no precedent to be compared with.

The emphasis is primarily upon “research into learning entrepreneurship first”, so any connections are likely to be driven from and behalf of research. There is a belief in RIT and sharing the experiences of senior staff on introductory modules. The staff believe the connection is “excellent”, but do students? Experiences are limited, as is feedback from interested stakeholders.

There is a clear and unambiguous set of outcomes; monitored globally. There is limited evidence of quite apparent narrow career destinations. Does that worry the faculty of the programme?

It was not clear to the Panel, even when explained by our respondents, as what the Learning Outcomes were. The faculty is concerned that short-term staff contracts can threaten the balance.

The programme reports a variety of support mechanisms available to staff and students, with some very positive examples (“Introduction to New Venture Creation Process”) but, again, the faculty are aware that these activities are, to a certain extent, “secondary” to their primary purpose (research).

Students felt that staff were not always available to advise them on the progress of their theses. The Team needs to be more specific as to how they intend to manage student expectations. With only a small cohort (even with a growth of a maximum of 30/40

students) this should not present a problem, though without effective communication channels it could become so, especially with overseas students.

Overall: good: At least on paper, as there was a distinct feeling in the Panel that the Team's interest in engagement with the evaluation process – documentation and in the interviews – was less than with the other Teams seen.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Basic studies are seen as important by the faculty; there are no specific remarks. There are no clear indicators of what the required starting level is, and the risk of a great difference in skills and knowledge among students starting the programme is apparent. This might not even be reduced through the collaborative learning in student teams that is introduced.

Teaching is closely related to the feedback process and faculty are very much involved in it.

The use of research in teaching as an integral element in the teaching, coupled with reflexive evaluations by the students of their own learning and the teaching, is innovative. However, the Panel did not get a clear picture of what was meant by the teaching methods “based on entrepreneurial learning pedagogy”. How are these methods inculcated into the programme and (new/untrained) staff? There is evidence of the piloting of new approaches; how are these assessed and disseminated to other staff? There is talk of the use of social media – developments and Virtual Learning Environments.

Besides traditional examination/assessment methods, the programme reports a wide range of methods in use – “entrepreneurial learning evaluation process” and extensive real projects coupled to a Master's thesis (the Haiti-project).

As has been said, feedback is integrated in the learning process. This probably works because of the small numbers. What will happen if and when the numbers grow? Recognising that this is a newly established programme, much of the reporting (p16) suggests the words “to develop”, “intended”.

Unlike other programmes, the programme reports extensive use of a wide range of teaching resources. The Panel does not know how staff are introduced to them, or how, where and when they decide to use them; and how good practice is disseminated. There seems to be no perceived shortage of teaching resources. The report suggests possible strains caused by staff–student ratios (which is, however, relevant to this programme). There is no real evidence of engagement with the Design Factory or the Entrepreneurship Club in terms of curriculum development.

Overall: good, but the Team need to support their many “excellent” responses in the light of real evidence. In parts, their responses are too verbose and tell little about the actual situation.

c. Degree programme evaluation and development (questions 17-22)

The Team reported this element as “excellent”; but did not reveal compelling evidence. The team reports that channels do exist, but to what extent is the feedback used? What about the take up from students? The low response rates suggest that the programme managers need to look seriously at why students so devalue their opportunities to contribute to curriculum development.

There are benefits from a close-knit group with the same interests. Are they interested in opportunities for team teaching?

They consider themselves experts.

There is a declaration of commitment to try new ideas and disseminate knowledge.

Overall: Potentially good

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Innovative reflective teaching and feedback methods.

c. In degree programme evaluation and development (questions 17-22)

Opportunities to engage in international projects using experiences learnt.

4. Recommendations for improvement

- Make sure the job profiles for the alumni of this programme are clear and related to the learning objectives.
- The programme should be clearer about the job profiles they are educating students for.
- Clearer positioning of the programme in working in collaboration with other innovative entrepreneurial learning opportunities such as the Design Factory, and the Entrepreneurship Society. If such links do exist from a student's perspective, they are not demonstrated in the (student) literature/on the web, such as the Information Guide available to International Students (curriculum development, research opportunities, and internationalization).
- Explore opportunities to embed entrepreneurial behaviours/enterprise education across the curriculum; open up such opportunities to all Aalto students as a career opportunity (maybe as a minor). Use this as the very embodiment of the Aalto mission.
- It is highly recommended that this Team seek (closer) co-operation with the entrepreneurship efforts of the School of Engineering, who seemed to be much closer to encouraging the students' entrepreneurial activity.
- Invest in real student-centred learning (especially in larger courses); undertake a training programme to clearly explain what is meant by and what the implications are to resources of becoming a student-centred learning institution.

Finance, MSc

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel wishes to congratulate the Programme Director, the Head of the Department and all the teachers for the effort put into designing and implementing the curriculum of the MSc in Finance and for their efforts to offer the Aalto School of Economics students the high quality education they receive.

The Bologna process and the Aalto integration are both seen by the MSc in Finance Programme management as opportunities to strive for and exceed international standards of excellence. The Panel highly appreciates the clear, well-defined attitude of the Programme Committee and the Department to capitalize on Aalto innovation from students, staff, and faculty, as well as from an individual course perspective.

- Intra-Aalto mobility is recognized as an opportunity: co-operation and collaboration with, for example, Industrial Engineering & Management (the Aalto School of Science) already exists with respect to both research and education (Private Equity & Venture Capital).
- The members of the Finance Department are continuously seeking complementarity and reciprocity with respect to teaching, curriculum development and cross-fertilization with other disciplines. They admirably strive to be multidisciplinary in their attitude, research and co-teaching efforts.

The faculty of the Finance Department is already internationally focused (e.g. the Head of the Department was a professor at Insead (Teacher Award Winner) and at Wharton Business School. The faculty has articulated and implemented a clear view on how to allocate resources (e.g. by hiring a PhD arriving from Germany in September 2011).

The MSc in Finance Programme is clearly “on top” of the Bologna process: all the faculty involved in the programme is actively working on and engaged in the development of the new Finance Programme with a view to insuring a stand-alone, Bologna-compliant MSc in Finance degree.

- The programme’s curriculum and courses are clearly benchmarked internationally as a standard approach to curriculum development. (The students and graduates also recognize this);
- The programme is open, diverse and signals a strategic view;
- The faculty of the Department is willing to listen and have a dialogue: industry and student representatives are members of the Programme Committee and give appreciated advice on curriculum development. (In addition, every three years, the whole Department goes off for the day and members of the Department share experiences and material/slides.) They clearly adhere to the “open innovation” model, advocated by Aalto;

- Every designated course has a designated course development task force of two or even three people (at least one professor; at least one is actually teaching the course). This is an important and even essential element in pedagogy, breaking the silo approach of “my course”, avoiding unnecessary overlap and introducing best practices and teaching innovations.
- Concrete plans to reduce the student–teacher ratio: the Department wants to start teaching in sections of 30–50 students as soon as teaching resources that have been promised become available in the form of tenure track slots. (See self-evaluation report para.1, page 20.)
- The Department benefits from having professors with relevant work experience and contacts with industry;
- Teaming up with world-class leaders and thinking about and initiating double-degree programmes in the MSc in Finance.

The fact that Finnish students (more often than not) have (part-time) jobs besides their studies is recognized as not so much of a “problem”; it is rather seen as a normal fact of Finnish student life and even as an opportunity.

- For example, a Master’s thesis student had an important position in a company, was paid and at the same time able to “feed” his Master’s thesis.
- The faculty tries to turn the fact that students work into an asset by leveraging relevant working experience in terms of education and research.
- Evening classes are already established.
- Full-time/part-time students are clustered into “fast” vs. “slow” track student groups with respect to the Master’s thesis. Furthermore, the Master’s thesis is rightfully seen as very important for the student’s positioning on the labour market (e.g. a Master’s thesis student prepared his thesis in collaboration with a top-class financial institution (Merrill Lynch). A successful thesis often results in the student being offered a job in the same institution or in an organization such as Goldman Sachs.
- The use of video conferencing during a Master’s thesis seminar by a Finnish student working for German company in Jakarta.

MSc in Finance graduates are in high domestic demand and some of them also prove their worth on the international labour market working for businesses such as McKinsey, Goldman Sachs etc. For example, MSc in Finance graduates constitute approximately a third of McKinsey’s total annual recruitment in Finland. Furthermore, MSc in Finance graduates are world-class. (The best of them have gone on to PhD studies at universities such as Columbia University, the University of Chicago and UCLA, some of them continuing to faculty positions at prestigious universities such as the University of Chicago, Harvard and the London Business School.) Less successful students, students who progress slowly and drop-outs are contacted individually to find out why they are so.

The Department also recognized that (fortunately only weak) incentives generated by the School’s structures and policies pointed in a direction opposite to market developments. The Department, being customer oriented, had the courage to follow the global market trends. Long-term vision and leadership have enabled the Department to avoid such short-term systemic, dysfunctional and bureaucratic rules, and allowed it to stay put in international benchmarking.

- The Department used resources for a post-doctoral position, was open to serendipity

and, as a consequence, found a way to collaborate with neuroscientists (low temperature lab, Aalto School of Science's Center of Excellence).

- Collaboration based on quality is established with the Hanken School of Economics (Intellectual Property Rights), although such cooperation is not evident, Hanken being "a competitor just across the road" (as other respondents have put it).

The Panel is, therefore, not surprised by the fact that, in the last SEFE satisfaction survey, the MSc in Finance was given the grade of 8.9/10 and by the fact that the programme is ranked in the Finnish Top 20 by the Finnish Higher Education Council, 2010-12 Centers of Excellence in Education evaluation. Furthermore, the students themselves (Helsingin Kauppateiden Ylioppilaat, KY) state that "the finance programmes (BSc and MSc) give excellent and relevant skills for working life and highly appreciate the heavy use of business cases and group work."

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Excellent: See above.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good to Excellent: See above.

c. Degree programme evaluation and development (questions 17-22)

Excellent: See above.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

See above.

- Search for complementarity with respect to teaching, curriculum development and cross-fertilization/multi-disciplinarity.
- International benchmarking as a standard approach to curriculum development. (The students and graduates also recognize this.)
- A designated course development task force for each course consisting of two or even three people (at least one professor; at least one is actually teaching the course).

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

See above.

- The use of video conferencing during a Master's thesis seminar by a Finnish student working for German company in Jakarta.
- The Department used resources for a post-doctoral position, was open to serendipity and, as a consequence, found a way to collaborate with neuroscientists (low temperature lab, Aalto School of Science's Center of Excellence).

- Collaboration based on quality is established with Hanken School of Economics (Intellectual Property Rights), although such cooperation is not evident, Hanken being “a competitor just across the road”.

c. In degree programme evaluation and development (questions 17-22)

See above.

- The faculty of the Department is willing to listen and offer dialogue: industry and student representatives are members of the Programme Committee and give appreciated advice on curriculum development. (In addition, every three years, the whole Department goes off for the day and members of the department share experiences, and material/slides.) They clearly adhere to the “open innovation” model, advocated by Aalto.

4. Recommendations for improvement

The Panel would like to stress and repeat the following elements that have perhaps been understated in the above:

1. Continue further down the chosen road: the MSc in Finance programme is clearly to be seen as “best practice” for the School.
2. The Department should also be invited to explain and elaborate on their views on the alumni network: others in the School and in Aalto might very well learn from their approach.
3. The Department should be encouraged to further experiment with dual degree programmes with internationally reputed institutions.
4. The Department should equally be encouraged to (continue efforts to) increase diversity both in terms of female students and faculty.
5. The Department has work to do in terms of meeting the challenge of introducing more inquiry-based learning as a challenge to follow up the efforts delivered in student-centred learning. This remark is to be seen as a compliment, as they are clearly ahead of the rest in the School (together with the Marketing Department).
6. The Department needs and deserves support on workplace feedback, alumni focus groups and with the development of an overall scorecard as an indicator of job satisfaction, financial results, etc. providing better management information.

International Business, BScBA (Mikkeli)

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Overview

The Mikkeli programme is unique amongst the Aalto portfolio. The three-week course structures with 45 hours of contact time and compulsory attendance engender good study habits within a close-knit international community of students and staff.

Strengths

- Strong student satisfaction with the programme. The 'Mikkeli spirit' appeared both real and vibrant based on a close-knit community in which students know each other and the permanent staff.
- Excellent student support is provided in both pastoral and academic matters with most students receiving appropriate support for the development of their personal study plans.
- The Programme staff were enthusiastic and committed to the student experience, enhancing the academic provision of the Mikkeli Bachelor's degree programme.
- The Programme Director and the Manager of Academic Operations demonstrated a strong focus on enhancing quality-assurance procedures to assure student learning within a fragmented programme based on three-week intensive study periods taught by visiting faculty.
- Mandatory international exchanges are a strong part of this programme and are well supported.
- The programme appeared to have good processes to support collaborative work and summatively assessed group work that rewarded individual contributions.
- A strong international community with students coming from over forty different nationalities with sixty visiting faculty members from around fifteen countries.
- The three-week course structures with 45 hours of course time and compulsory attendance engender good study habits in Mikkeli students.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Good

In recent years the School has made great strides to define programme learning outcomes with the Programme Director supporting the definition and monitoring of course outcomes and structures and coordination between courses. Further work on both the definition of course learning outcomes and assuring the quality of learning and assessment provision is both ongoing and necessary.

- The degree is well planned and managed through the strong leadership of an individual Programme Director, but the consolidation of expertise in one person may be a potential weakness.
- Programme and course learning outcomes have been specified and linked. However, they are not clearly differentiated according to level.
- The Programme Director monitors the course content and design of the visiting faculty, but no checks are undertaken in terms of the standard of student work and achievement.
- The thesis provides students with their only experience of independent learning. We understand from the Programme that this seems to be sufficient, as students are subsequently able to do well on international exchanges and Master's programmes.
- Students are advised against taking two intensive courses at the same time to avoid excessive workloads.
- The Programme welcomes the new Aalto structure, foreseeing that students from other programmes will take Mikkeli summer courses and in some instances (limited to structure) Mikkeli students to take courses from other disciplines.
- Quality assurance of academic standards (grades/marks awarded) is still embryonic.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good - but recommendations are made.

The unique programme structure of the Mikkeli programme brings many strengths but also poses problems with programme coordination. The Programme Director has, in recent years, initiated processes to enhance programme coordination through more specific use of course outcomes and monitoring course design including assessment.

- Students are given appropriate and personal advice by the Manager of Academic Operations on their individual study plans.
- Course and assessment design is undertaken by visiting professors. However, the Programme Director has recently taken a more emphatic role in monitoring the assessments and course plans of professors new to the Mikkeli programme. This should be strengthened further.
- The intensive three-week course structures with 45 hours of contact time and compulsory attendance seem to engender good study habits in the Mikkeli students.
- Basic-skill courses appear to be appropriate and students seem to be satisfied with the provision; their sequencing seems to be thoughtfully considered.
- The student workload is restricted in that students are guided to take only one course at a time. The provision of summer courses also allows students to spread their learning over a full calendar year.
- Academic failure and attrition rates are low.
- There seem to be few or no linkages between courses, so synoptic learning connections appear to be lacking.
- The programme recognizes difficulties posed by the structure in terms of developing slowly learnt cognitive and practical skills.
- Whilst the Mikkeli programme structure provides a unique and special international experience, it may hinder course development in terms of a course leader developing a course over time.

c. Degree programme evaluation and development (questions 17-22)

Good

- Students are invited to evaluate each course, and the response rates are good. The Programme Team demonstrates a commitment to respond to student feedback, particularly in terms of considering whether Visiting Professors are invited back. This, however, may mean that Visiting Professors seek good student evaluations over learning. Consequently, student achievement in terms of their assessed work could be more carefully monitored.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The students receive individual support within a strong, close-knit international community in which they feel they are personally known by visiting lectures and well supported.

Committed programme staff.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

As in the 'strengths of the programme'.

c. In degree programme evaluation and development (questions 17-22)

Good feedback response rates with feedback used to determine future delivery.

4. Recommendations for improvement

Whilst the Mikkeli programme is a strong part of the Aalto offering, the Panel has some concerns in relation to the issue of numbers.

1. Fragmentation. The programme is fragmented into three-week intensive courses. The Panel has some concerns about the depth and permanence of learning undertaken in this structure along with a perceived lack of structural opportunities to make links and connections between subject areas. The Panel recommends that the Programme considers the following:
 - Introducing a synoptic element into the programme to improve student learning connections across courses, for example an integrated case study examination, a capstone project, or an integrated work-based project.
 - Ensuring that extended writing tasks are integrated into the programme (more than just the thesis).
 - Enhanced co-ordination of learning across the programme to facilitate high-level complex learning, deep learning and 'slowly learnt' academic and practical skill development.
 - Ensure that students engage with academic journal articles as well as course texts to engage with concepts and practice at the forefront of the discipline.

2. Further work on academic standards across the programme to ensure progressive challenge (defined through learning outcomes discussed with students and staff) needs to be undertaken.
3. Whilst the Panel appreciates the efforts already made to ensure that courses are co-ordinated and integrated within the programme, such a programme focus could be further enhanced to ensure a programme-based experience for the Mikkeli students.
4. Quality assurance of assessment standards needs to be enhanced so that the marking/grading of visiting professors is both moderated and assured for reliability and consistency, particularly as visiting professors come from a wide variety of different countries and institutions.
5. The Panel advises the Programme that the Bologna Declaration specifies a minimum first cycle duration of three years; therefore Bachelor's degree programmes completed in less than this time may be denied recognition in certain countries. Consequently, Mikkeli students who complete their studies in less than three years may encounter issues of qualification equivalence with traditional three-to-four-year programmes if they wish to take a Master's programme elsewhere.

International Business, MSc (Helsinki)

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Overview

The MSc in International Business is delivered entirely in English and has strong international links; it uses international visiting teachers and real-life case studies to provide an authentic work-linked, international experience to students. However, this poses coordination problems, owing to the complexity of staffing exacerbated by current changes.

Strengths

- The capstone course in conjunction with L'Oréal has brought together IBC, IB, Marketing and Art and Design students. This course is both innovative and employer-focused.
- Strong involvement with industry practitioners and alumni in many different forms supports student engagement with employers.
- Student-centred learning is evident in many practices within a sharing and co-operative environment.
- Weekly informal programme meetings including staff and students cultivate community and shared understanding.
- The Programme Team is positive about Aalto and the potential for increased interdisciplinarity, but is concerned that the Aalto Business School might be swamped by students from other Aalto programmes.
- Tutors are accessible and supportive.
- Student 'Voluntary Assistants' are an innovative way of supporting the programme and improving student project skills.
- Students are on the Advisory Board of the CEMs programme.
- The strong international dimension throughout the programme arising from visiting international faculty and student exchanges is a strength of the programme.
- The CEMs programme is a strong part of the offering with better student evaluation processes.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Good/Emergent

- A common School framework is used across all programmes.
- The team has made efforts to develop an academic community in a mutually

supportive environment with frequent informal interaction, including weekly informal meetings.

- Academic leadership in times of uncertainty and development may require additional resourcing and recognition by Aalto management to steer and operationalise change.
- Programme coherence requires further development in terms of both aligning programme and course outcomes and assessment, and integrating visiting teaching staff within the programme.
- Programme LOs (learning outcomes) need to be further defined, taking account of the Mikkeli undergraduate experience, to ensure distinctiveness and progression in terms of content, standards and skills.
- The degree co-ordinator is only on a temporary (one-year) contract.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good/emergent

- The capstone course brings together students from different disciplines in an innovative and employment-focused context.
- Co-teaching is a strength of the programme and supports new staff well.
- The Personal Study Plan is good in theory but in practice is applied erratically.
- Quality assurance of assessment standards and feedback is embryonic; there is no moderation/second marking of student work.
- Transition to Master's is blurred. Bachelor's and Master's programmes require separation.
- Students moving from the Mikkeli IBC programme suggest that this Master's programme could benefit from more challenge and distinctiveness. In the future, the management of a student cohort with diverse prior educational experience requires further consideration.
- Quality assurance of assessment standards and the usefulness of feedback to students need to be tightened.

c. Degree programme evaluation and development (questions 17-22)

Emergent

- University evaluation processes do not appear to work, owing to low student response rates (see recommendations).
- Development appears to focus at course level with little articulation with programme outcomes. Curricula development is under-resourced.

Good

- The team has good connections with industry, and informal feedback is used to develop courses.
- Co-teaching allows for a good platform for co-operation between colleagues in the planning and implementation of courses.
- Whilst members of the programme had participated in Aalto staff development sessions and had found these valuable, there was no compulsory developmental activity for staff/new staff and programme members suggested that School-level activity would promote more engagement.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Student inclusion on the Advisory Board of the CEMS is a practice that could be replicated by other programmes.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- The capstone course is a best practice in this programme as detailed under 'strengths'.
- The use of paid student Voluntary Assistants is a strong feature which builds up students' skills as well as programme project administration and community development.

c. In degree programme evaluation and development (questions 17-22)

4. Recommendations for improvement

Aalto Management should consider ways to improve value and resource teaching. The Panel recommends a teaching tenure track in which excellence in teaching is recognized and rewarded. The School and Programme should consider how to improve the teacher-tutor system. Regular, compulsory meetings to monitor the holistic, academic progress of students and pastoral care are needed, as well as the planning of programmes of study. This may improve retention. To improve programme coherence it is recommended that the programme:

- articulates course learning outcomes more specifically in terms of what students are able to demonstrate at the end of each course and ensure that these course outcomes align to programme level outcomes;
- considers how to improve the sequential progression of the programme through a tighter system of prerequisites. The sequenced progression of the programme can be undermined, because of exchanges. As the programme also suffers from large classes, it may be useful to provide alternate runs of courses so that they may be taken at several times during the year;
- clearly differentiates between Bachelor's and Master's courses, ensuring that students complete their Bachelor's before commencing their Master studies. This will not only align with the Bologna Framework but also allow Bachelor's students to deliver an extended piece of writing involving independent study before progressing to the Master's level. There are particular issues with IB Bachelor's graduates finding some repetition and lack of differentiation;
- clarifies course outcomes and learning activities to ensure that there is no overlap between courses and to support progression.

To assure the quality and standards of the courses offered it is recommended that the Programme consider the following:

- Formal processes that assure the quality of grading whereby members of the Department look.

- At the marking standards applied to students' coursework and examination scripts. Currently, co-teaching pairs do this.
- Improvement of the quality assurance of feedback to students to develop more consistent practices across the programme. It would also be useful to consider how feedback to students is relayed to future courses and how students engage with the feedback.
- Course evaluation by students requires improvements to the electronic response rate to allow student evaluations to be meaningful, representative and useful. If this is not possible, then the Panel recommends reverting to paper-based systems in all courses. (In-course feedback has been used to good effect in many of the IB courses.)

Finally, the School and Programme would benefit from increased compulsory pedagogical training for all new staff and to update experienced colleagues from a dedicated School teaching and learning expert. This person may sit within a central Aalto unit but with a direct link to the School and be responsible for the design and delivery of continuing professional development discussed in yearly appraisals.

Management

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

Owing to the close relationship between the two programmes, the Panel decided to report on these two programmes together.

Overview

The Management Programme demonstrates a commitment to learning and teaching that has been built up over many years. However, balancing teaching with research and managing large student numbers, particularly in the first year of the Bachelor's programme, means that student-centred learning is difficult to accomplish.

Strengths

- The Panel was impressed by the focus on student co-operative learning particularly in the Master's course and years 2 and 3 of the Bachelor's programme.
- The Panel welcomes the commitment to pedagogic research and evidence-based teaching by members of the programme.
- The practice of co-teaching has enabled good pedagogic practice to spread through the teaching team, allowing paired staff to discuss their teaching and assessment practice in depth and facilitated the induction and orientation of new staff.
- PhD students who contribute to teaching are required to follow a compulsory module on academic practice that helps their initial ventures into teaching.
- The high level of collegiality between the programme and the Language and Communication Department brings a more coherent provision.
- The Programme has a strong research base.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Overall: Good (within constraints)

- A common School framework is used across all programmes.
- The Programme team is accustomed to five or six year registrations leading to a Master's degree. Current changes towards 3 plus 2 degree structures require new thinking as well as procedural changes. This, in addition to the changes posed by the new Aalto context, has promoted a climate of uncertainty and unease including some uncertainty over employment security.
- Academic leadership in times of uncertainty and development requires resourcing and recognition to steer and operationalise change; this seems to be an issue and may undermine good programme management and staff morale.

- The team has made efforts to develop an academic community in a mutually supportive environment with frequent informal interaction.
- Programme coherence requires further development in terms of both aligning programme and course outcomes and assessment.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Good (in parts)

- The Personal Study Plan arrangements, whilst good in theory in practice, are applied erratically.
- Quality assurance of assessment standards and feedback is embryonic; there is no moderation/second marking of student work.
- Course learning outcomes require more specification, alignment with level, alignment with assessment, and with programme learning outcomes.
- There is evidence of a strong and vibrant academic community, but many processes are reliant on informal practice, making induction and orientation difficult for new staff. This may inhibit integration with other disciplines.
- Procedures need to be more transparent to students.
- First-year basic studies classes are large and transmission-based, risking early disengagement and passive learning styles.

c. Degree programme evaluation and development (questions 17-22)

Emergent

- University evaluation processes do not appear to work, owing to low student response rates (see recommendations).
- Development appears to focus at course level with little articulation with programme outcomes.
- Curricula development is under-resourced.

Good

- The team has good connections with industry and informal feedback is used to develop courses.
- Co-teaching allows co-operation between colleagues in the planning and implementation of courses.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

See strengths.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

See strengths.

c. In degree programme evaluation and development (questions 17-22)

4. Recommendations for improvement

To enhance teaching it is recommended that the Aalto Management consider ways to value and resource teaching. The Panel would strongly recommend a teaching tenure track in which excellence in teaching can be encouraged through recognition and reward.

The School and Programme should consider how to improve the teacher-tutor system. Regular, compulsory meetings that allow the holistic, academic progress of students and their pastoral wellbeing to be monitored are needed, as well as the planning of their programmes of study. This may well improve retention.

To improve programme coherence it is recommended that the programme acts as follows:

- Articulates course learning outcomes more specifically in terms of what students are able to demonstrate at the end of each course appropriate to each level of the programme (Bachelor's years 1 to 3 plus Master's level) and these course outcomes align to programme level outcomes.
- Considers how to improve the sequential progression of the programme through a tighter system of prerequisites.
- Moves to a programme-based approach to learning where coherence between courses is both transparent and assured.
- Clearly differentiates between Bachelor's and Master's courses, allowing students to complete their Bachelor's before commencing their Master's studies. This will not only align with the Bologna Declaration but will also allow Bachelor's degree students to deliver an extended piece of writing involving independent study before studying at the Master's level.

To assure the quality and standards of the courses offered it is recommended that the programme considers:

- Formal processes that assure the quality of grading whereby members of the Department look at the marking standards applied to students' coursework and examination scripts.
- Improved quality assurance of feedback (to students) to develop more consistent feedback practices across the programme. It would also be useful to consider how feedback to students is relayed to future courses and how students engage with the feedback.

Course evaluation by students requires improvements to the electronic feedback response rate to allow student evaluations to be meaningful, representative and useful to teaching staff. If this is impossible, then the Panel recommends reverting to a paper-based system.

Finally, the School and Programme would benefit from increased compulsory pedagogical training for all new staff and from updating experienced colleagues by a dedicated School teaching and learning expert. This person may sit within a central Aalto unit but with a direct link to the School and be responsible for the design and delivery of continuing professional development discussed in yearly appraisals.

Marketing, BSc

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel's view is that this programme is an example of one that has fully absorbed and applied Bologna-curriculum design principles. The team is actively embracing the vision of a practice-oriented BSc and delivering both employable students and adequately preparing those who wish to go on to an MSc. This is an inspiration to others of how to develop a true Bologna Bachelor's degree and a separate and independent MSc attractive to international students and faculty.

The Panel highlights the Marketing BSc's efforts to do the following:

1. Actively benchmark their programmes with leading European and US institutions.
2. Attract and retain faculty who have their doctorates from other (UK) universities.
3. Quickly, consistently, energetically, and enthusiastically develop the programme and continuously launch new editions of it. (The self-evaluation report refers to "fast product development" in various places.)
4. Institute co-teaching as a core value, even if there are no budgetary incentives within ASE or AU for co-teaching. Moreover, they willingly engage with each other as co-teachers and co-learning partners of their students.
5. Engage in experiments: try it, do it, and if it is not perfect, then fix it and keep it; or else, if it fails, have the courage to discard it without delay.
6. Actively seek out capable marketing teaching colleagues for marketing core courses not only for programmes in industrial engineering and management but also in Helsinki University and other Finnish Schools, despite being such a small team.
7. Bring back "sales and sales management" into the core marketing curriculum.
8. Reflect deeply on Finnish society's view of the Bachelor's degree position in the marketplace: "Finland is not accustomed to Bachelor's degree graduates, but we think there are too many over-educated MSc students who are 28 and therefore the big Fortune 500 companies will not hire them. They will look elsewhere in Europe to staff these jobs".

The marketing faculty clearly wants the Bachelor's to end in three years and for students to go out and work. Then a minority are welcomed back to do either an MBA degree or a research-oriented MSc leading to a PhD.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Scale: good

1. Great teamwork, consistent overall view on marketing with respect to clearly defined competence areas. The team believes their students need a fundamental awareness of consumer behaviour, and skills and knowledge about both qualitative and quantitative methods. Then they immerse their students into three specialization areas: Product Brand Manager, Advertising, Consumer Research Manager, or Sales and Sales Force Manager.

Scale: excellent

2. Programme has created a mobility window that would facilitate study exchange abroad or enrolment in cross-disciplinary subjects within Aalto's other Schools.

Further issues:

How to disseminate best practices to others (see our Recommendations section) and what will happen to this Marketing BSc Programme in the context of the wider review of the "new style" ASE Bachelor's degree.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Scale: "emerging" primarily due to resource constraints as explained below.

The Panel wants to stress the following:

1. Resource constraints are currently being mitigated by a voluntary, energetic, team;
2. A PhD candidate team runs the first marketing course in the core, doing it 7 times in 2.5 years, with only one co-teacher, a class capacity of 450, grading done alone without TAs, and still the PhD candidate doing this teaching is on track for his PhD dissertation and has written six peer-reviewed journal articles. However, such superstars and heroic efforts should not be considered "normal", as they are not sustainable faculty staffing models;
3. The Head of the Department is twisting the arms of other PhD candidates for help in teaching and giving feedback in the interactive workshop component of the first-year marketing course. Again, this is not a sustainable and viable staffing model.

c. Degree programme evaluation and development (questions 17-22)

Please see Section 1 "Strengths of the Degree Programme" above.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

Please see Section 1.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Please see Section 1.

c. In degree programme evaluation and development (questions 17-22)

Please see Section 1.

4. Recommendations for improvement

Recommendations:

1. Sharpen the focus of the Basic Studies learning outcomes. Perhaps some of the courses in Basic Studies can be restructured and integrated into other courses in a more coherent fashion. For instance, skills development in oral and written presentations, critical thinking, negotiations, ethical behaviour and leadership should be integrated into many courses offered throughout the Bachelor's degree and not isolated in certain Basic Studies modules. Skill development and critical thinking require relevant context to come alive, especially at the Bachelor's level.
2. If students get isolated from learning about critical thinking in the absence of a real and relevant context they cannot internalize the learning in a deep way.
3. For Bologna students on a three-year BSc course, the time students spend in Business studies has to be used more effectively: the skills development needs to happen in the Business studies early on.

Important constraints are these:

1. Time constraints: Do not waste precious time in introductory courses that could be accelerated and taught more effectively.
2. Lecture-style teaching versus skills-development teaching tensions. ASE and AU on a broader discussion level need to decide and make clear who should do the skills pedagogical support. Should you only have the specialists do it, or should you also trust capable teachers who are using student-centred teaching and learning in their respective disciplines? Of course, if you do trust the teachers, make sure they do indeed have the skills. Support them with the following:
 - a. time to take pedagogical training courses;
 - b. proper mentoring, co-teaching and coaching so they can practise doing skills teaching methods;
 - c. adequately designed classroom facilities, student breakout rooms; and most importantly of all,
 - d. the financial resources and faculty to enable smaller class sizes.

Marketing, MSc

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel sees many strengths in the Marketing (MKT) MSc programme's design, development, and implementation, namely:

1. A Bologna compliant MSc programme with a clearly defined profile of the target students. The curriculum is attractive to both international and Finnish students who desire to be research-oriented marketing specialists.
2. Valuable thinking on the part of the team on three fronts: (1) how to accelerate Master's students' studies to ensure timely completion of their Master's thesis project and exit after two years into the real world; (2) how to better equip the more capable students to qualify for leading PhD programmes (either in Finland or abroad); and (3) how to articulate an explicit vision that accommodates those students (either from abroad, or Finnish students who are already working) who wish to do an accelerated MSc in Marketing in only one year.
3. A coherent faculty and PhD candidates team with tremendous energy, creativity, and capacity for doing both A level research publications and teaching, despite numerous recent faculty retirements and simultaneous promotions of tenured full professors of marketing to senior administration positions in the ASE leadership team.
4. Active external benchmarking of MKT MSc programme requirements and admissions criteria with leading marketing programmes in business schools in the US, the UK, Continental Europe and elsewhere.
5. The programme appears to be the result of a clear understanding of the Bologna criteria with broad stakeholder input in the design of the programme and a keen assessment and understanding of what Fortune 500 companies are looking for when recruiting graduates of this programme. Graduates are also well-equipped to enter demanding PhD programmes.
6. A coherent, MKT MSc programme structure, consisting of an innovative, fully modular "Four Seasons" approach, where core courses are clustered around the competencies required of a global marketing manager. We think the choices made are logical and sensible. Autumn Term: strategic marketing thinking and knowledge; Winter Term: sales force and retail channel management; Spring: consumer behaviour, applied market research methodologies, and communications. The modules allow students to plan and co-ordinate their own learning agendas and combine them with practical work activities that provide relevancy and context to theory and business practice. The "Four Seasons" concept is also good for recruiting students, in that the curriculum's design is distinctive, easy to explain, memorable, and appealing to prospective MKT MSc candidates. The other advantage is that visiting faculty can teach their elective in one term, and are then free to do research in the other terms.

7. The Programme management have planned to allow a 30 ECT mobility “window” which can easily be integrated with other Aalto University Master’s programmes as they emerge.
8. Finally, we should like to praise the open mindset of the MKT MSc programme leadership team, and its willingness to engage already in creative research involving students (e.g., MediaLab, StratLab) and co-teaching collaborations with the Aalto School of Art and Design and the School of Science’s Industrial Management and Engineering faculty and research hubs.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Excellent:

1. Active external benchmarking of MSc programme requirements and admissions criteria with leading marketing programmes in business schools in the US, the UK, Continental Europe and elsewhere).
2. Clear quantitative objectives to reach their goal (for example, aiming at 60% to 80% of BSc and MSc graduates working in Fortune 500 companies by 2020).
3. Great teamwork and, overall, a consistent view of marketing with respect to clearly defined competence areas: the Department recognizes the need for fundamental skills in understanding consumer behaviour and being able to do and apply appropriate qualitative and quantitative methods. Further, after absorbing the fundamentals, the sequence of courses immerses students into areas of specialization such as product brand manager, advertising, consumer research manager, or sales/sales manager.

An additional comment:

The Panel would also like to stress that is essential for all business students to be introduced to marketing knowledge and skills, especially those students studying entrepreneurship and those that aspire to work in family businesses, or hold senior management positions in small and mid-sized enterprises (SMEs).

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

This programme has implemented innovative co-teaching despite the lack of institutional incentives for it. There are clear links with relevant basic research and Aalto-integrated teaching such as the MediaBizLab project and its associated teaching programmes.

Excellent:

1. Consistent view of team competence management “who does what best” and then allowing them to teach it.
2. The Team gains from synergies between and among every single individual. They are good at bringing out the best in each member and in each other as a synergistic whole.

3. The Team is focused on developing curricula for students that will make them more employable, not only in Finland but also abroad. They emphasize critical thinking skills, which will equip students for the rest of their lives.

Good:

1. Actively engaging students in gaining both qualitative and quantitative methods so they can complete their thesis without hitting a roadblock due to methods.
2. They offer the “quant refresher” course twice a year, which is intentionally scheduled immediately before the students need it in order to refresh their quant methods skills before beginning their Master’s thesis research.

c. Degree programme evaluation and development (questions 17-22)

See above.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The Panel can clearly identify some important best practices that should be disseminated across the School and even across Aalto:

1. Successful trimming and pruning of the course portfolio to the bare essentials. The MSc in Marketing, has been successful in clustering courses around core marketing competencies.
2. A keen focus on developing professional skills in graduates who are useful for companies in a wide variety of industries and service sectors.
3. The “Bologna” emphasis on employability after the two-year and possibly accelerated one-year MSc degree. Such an approach has merit for consideration within other Aalto Master’s degree programmes, as it is line with best practices at other leading European business schools, even though traditionally Finnish society has allowed working students to stretch their Master’s studies to seven or even eight years while they complete their studies.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The Department adheres to an exemplary diversity of teaching methods and proficiency in selecting which methods are appropriate to achieve the active student learning aims of each course:

1. There is a real understanding and focus on understanding what Bologna means by defining learning outcomes coupled with striving for pedagogical excellence in developing state-of-the-art student assessment and feedback processes. The team’s skills and capabilities to give creative real-time or timely feedback using a wide variety of media (videotaping, social network media, interactive workshops and poster sessions). Also notable was the team’s critical questioning of how to really measure learning outcomes, questioning and research which would be useful to share with those faculty and staff preparing AACSB and other accreditation surveys.

2. The team successfully co-creates basic research agendas by seeking out the extensive incorporation of real-live case studies in cooperation with leading Finnish companies and multinationals. The team deserves praise for identifying, searching and thinking of developing many novel approaches to link and connect Finnish businesses to basic field research with teaching. (We refer to the deliverables of the Advanced Consumer Behaviour course on p. 5 of the self-evaluation report, item 2d.) These kinds of creative real-life “social/business laboratory” experiments need to be encouraged and disseminated across ASE and Aalto as a best practice.
3. The Introduction to Marketing course could be a role model for other introductory courses on how to engage students in large lecture-style classrooms, supplemented with smaller interactive workshops designed to deepen learning and build skills.

c. In degree programme evaluation and development (questions 17-22)

The Panel identified the following:

1. The programme team in the course “Quantitative Research Methods in Marketing” has invented a novel Internet Survey Feedback form with both open and structured questions on each topic of the course, which is an example of best practice. Such a survey enables faculty to see granular feedback which is very useful for further course development and assessment of how effective different forms of teaching methodology were for actual student learning (e.g., learning exercises, learning diaries, readings, etc.) Such information is unequivocally important for a variety of constituencies, but it is especially important for those course instructors who are offering a course for the first time, or for brand-new teachers who need to develop and enhance their curriculum designs, or for programme managers who must decide whether to continue a new course, drop it, or ask that it be redesigned. ASE recognizes it has a problem with student feedback at the end of a course. Such an Internet approach would be faster, more efficient than a paper-based system, less costly (in terms of secretarial transcribing time), and more easily shared with others.
2. The ideas of the marketing group on how to improve the basic studies course on “Critical Thinking and Reasoning” is certainly worth exploring.

4. Recommendations for improvement

Short Term Recommendations:

1. Reconsider the design of the BSc in Marketing in harmony with the decisions taken at the Bachelor’s degree committee level, because depending on what approach to the Bachelor’s degree is chosen by the ASE leadership team, the outcome may require a redesigning of the BSc curriculum contents. However, we are confident the marketing team is more than capable of listening to their constituencies and fellow faculty colleagues and making any required adjustments.
2. Continue doing what you are doing, but temper your expectations with the realization that the pace of transformation of other programmes might be slower than in your own. We encourage your continued patience. The vitality of a young faculty team certainly has its virtues, but such high energy levels might pose a threat to more “established” faculty who may not have the same energy level and reserves of

abundant energy that the marketing team has. Be cognizant that the “establishment” may also have the wisdom of questioning some of the “sustainability” of some of the initiatives of this group.

3. The team is challenging many basic assumptions of Finnish academic culture. We encourage them to brave the “resistance” to what you are doing despite the lack of institutional incentives to reward excellence in teaching and appropriate transfer pricing mechanisms to reward faculty collaboration across the silos. A caveat here: avoid innovativeness at the expense of “A-level” research publications.

Further recommendations:

1. We recommend the ASE Leadership Team and Aalto University’s top management to address the concerns of faculty members who would like to see a better clarification of the Aalto vision and what it means for them both as members of the Aalto School of Economics and as members of Aalto University. The Marketing Department is eager to tap into the Aalto vision (perceived as promising more tenure-line faculty positions) but the feeling is there that when the faculty retires or is seconded into higher management jobs, the promised positions are taken “away” or put on hold. Valuable candidates were lost. The Department is also concerned that when they do get the “green light” to resume recruiting, that whoever is hired has both *teaching* and *research* skills and fits with the team’s culture to avoid distracting conflicts.
2. The Panel furthermore wants to express its concerns with respect to the work overload of the marketing faculty, possibly causing distress, and negatively influencing their ability to continue doing A-level research while committed to heavy teaching schedules and the call to perform senior administration responsibilities within AU and ASE. The Marketing unit is popular and its courses are showing increasing demand from students, evidenced by the large class sizes, the large number of courses they are teaching, and the calls not only of other Aalto University programmes to supply them with marketing courses, but also solicitations from other Universities, including the University of Helsinki. The team refers to its “guerilla tactics” to overcome hurdles to good teaching; a good example would be co-opting PhD doctoral students to teach the interactive workshops in the core marketing course. We question whether that model is sustainable over the long term, relying on the goodwill of the PhD candidates in the Department to do what normally is done by paid tutors. The risks are that the less able PhD candidates will be distracted from their research and dissertations and be delayed in completing their PhDs.
3. A last concern refers to the Master’s thesis strategy whereby marketing students are invited to join smaller research projects in co-operation with business partners. This is in many ways an excellent way of bringing together students, practitioners and researchers. However, if researchers provide students with key-turn problems and research questions, they might not receive enough practice and training in problem identification and problem definition.

Part B. Feedback and recommendations for the students of all degree programmes of the School

1 Good Student Citizenship

We invite students to think of themselves as an active part of *a learning community* and *co-creators of knowledge*. This is also captured by the notion of '*good student citizenship*', which is about the rights and responsibilities of students. Good student citizenship operates on four levels: representation; giving feedback; partnership, i.e. involvement in decision-making and committees; and last but not least, engagement in the quest for knowledge and competencies with fellow students, teachers and tutors.

2 Student jobs and internships

Student jobs are a fact of life for many students. We encourage students to think about how different types of work experiences can be turned into a resource for learning as well as personal and professional development. Relevant part-time jobs and internships are considered an asset by employers, as are student club activities, which can be an excellent platform for developing leadership skills. Likewise, extra-curricular voluntary and NGO work can challenge students in ways that are highly relevant for their future careers in private and public organizations.

While some jobs and extra-curricular activities can easily be translated into a resource by both students and employers, students should make an effort in terms of explaining, and articulating the value of jobs and activities which may strike some as less relevant.

Also note that, with Bologna, employers will expect students to graduate faster, also when students have jobs that are perceived of as relevant. In other words, it takes careful planning and discipline on the part of students to reconcile part-time work and full-time study.

3 International Mobility

We encourage students to capitalize on the opportunities for international exchange programmes and international internships at ASE. Students can and should voice the need for ensuring that each programme (both at the Bachelor's and at the Master's level) has an international mobility window, with a clear policy for recognition and transfer of credits towards the home degree upon return from a study visit abroad. Crucially, we also encourage students to engage with those students who come to Aalto from abroad (exchange or international degree students). Along with the programme committees of their respective programmes and their teachers they share the responsibility for realizing an international learning environment where international students are not left to their own devices. This also involves actively including international students in various extracurricular activities and orientation programmes.

4 Intra-Aalto Mobility

We encourage students to actively seek and capitalize on the opportunities for intra-

Aalto mobility. This also involves working with the programme committees of their respective programmes to ensure that intra-Aalto mobility is not only feasible, but practical in terms of logistics, access to relevant courses, and ease of recognition and transfer of credits towards their own degree of courses completed in another Aalto School.

It was our impression that current intra-Aalto mobility opportunities such as those offered by the Design Factory are unexplored, if not unknown, by most students. That said, if student-driven demand for intra-Aalto mobility should increase beyond its present modest level, ASE and AU will have to address the current bureaucratic obstacles and disincentives for such student mobility and programme collaboration. (Please refer to our remarks in Part C. Section 1.3 “Incentivize activities that facilitate creation of cross-school value from the AU merger”.)

5 Student guidance/tutor procedures

Students and teaching faculty alike deplore the *de facto* failure of the present student guidance/tutor procedures to deliver. This is a paradox, as both students and teaching faculty agree on the importance of such procedures for practising student-centred learning. Students must be active partners with programme committees and teachers in devising methods that work, create value and make sense, and also when such methods need to be developed with scarce resources.

6 The feedback system

Students and teaching faculty alike deplore the *de facto* failure of the present formal feedback system to deliver adequate feedback for curriculum development and teaching method improvements. This is a major problem in terms of Quality Assurance Procedures and must be addressed in the near future. However, students share a responsibility in terms of raising this issue in relevant programme committees and governance bodies and co-creating systems that deliver in terms of creating valuable and timely information about the perceived quality of courses, other teaching-related activities and the learning environment, and in terms of creating a mutually respected feedback loop, characterized by dialogue and consequence.

7 Student housing issues

Residential learning programmes on campus should be considered as part of the new Aalto Campus Master Plan. University-provided dormitories have already been built or are already part of the Master Plans of various Bologna schools in the CEMS network to facilitate foreign exchange student mobility. We advise closer collaboration between Aalto University and the KY Student Union to address the housing needs of foreign students. More university resources should be spent on studying the housing needs of students, and to plan for residential learning facilities benchmarked against leading public and private universities around the world. Residential programmes can greatly enhance and enrich student life and learning opportunities.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

1 Recommendations/feedback to the Aalto University Executive Leadership Team

1.1 Co-Leadership

It appears that, for quite some time, the Aalto University Executive Leadership Team (AUELT) has been perceived by the Aalto School of Economics (ASE) faculty and students to be invisible in terms of keeping AU's vision alive and involving the broader University in the implementation of the first stages of the merger and the many difficult and complicated decisions characterizing this stage. Among faculty and students (also beyond the ASE) alike we have noted the perceived 'state of the nation' to be one of high ambiguity and goal uncertainty. Provocatively expressed: the honeymoon is over!

We suggest that the AUELT take immediate action to address this, exercising co-leadership with its key internal stakeholders.

Co-leadership entails

- Proper *engagement and integration of the 6 Aalto School leadership teams* in the Aalto University Management
- Systematically working with the *hearts and minds* of deans, faculty, students and admin staff, laying the foundation of the trust and co-ownership on which AU's success will ultimately rest. Presently we hear faculty, staff, and students referring to AU and the AUELT as 'they' and not 'us'. Co-captainship, combined with intra-Aalto mobility of teaching and research staff can be of essential help to achieve this.
- Sustained *internal and external communication* about progress, dilemmas, prospects, roles, and decision needs to take place on a continuous basis, both through formal as well as informal channels (see also 1.2 Governance).

1.2 Governance

We encourage the AUELT to address a perceived *lack of clarity in and the appropriateness of the delegation of powers* between AU and the six Schools, paying attention to the *need for strategic space at the School level* and for mechanisms that can align this with the overall Aalto University strategy.

In the self-evaluation reports and in our interviews we have observed a good deal of frustration and confusion flowing from difficulties in understanding where decisions are being made, who has the authority to take decisions at a School-level, and the delays involved in making decisions.

When reviewing the governance system, we encourage the AUELT to think of how to ensure that AU's governance system suits the needs of a modern service and knowledge organization in which flexibility and the capacity to act strategically at the School level are the prerequisites for ensuring the innovation, creativity and entrepreneurship on which the Aalto University vision depends. We also suggest that the AUELT consider

a somewhat different division of labour between departments (Heads of Department) and programmes (Programme Directors), with more formal power to the Programme Directors, including the delegation of a budget.

Finally, we suggest that the AU/ELT consider how it might be possible to recognize and harness the internationally renowned research status of the ASE that is closely related to the former brand: the Helsinki School of Economics. Perhaps for the time being, the name could be The Helsinki School of Economics at Aalto University.

1.3 Incentivize activities that facilitate creation of cross-School value from the AU merger

With some notable exceptions, such as the launch of the pilot AU BA programme, three inter-disciplinary Master's programmes and the Design Factory, there are as yet too few concrete examples of students and programmes benefiting from the opportunities inherent in Aalto University. While it takes time and resources to develop new initiatives such as those just mentioned from scratch, we believe there are many low-hanging fruits to harvest right now that would create volume to the intra-School traffic of students and teaching faculty, adding real value to the quality of students' competencies and skills while also translating the AU vision into tangible action and more visible "wins" to enhance post merger integration momentum.

The biggest impediment to enhancing faculty and student collaboration across AU and ASE-ECON is a lack of incentives to make it worthwhile for programmes and departments to engage in teaching activities that involve students and faculty from other Schools. Programme Directors and teaching faculty appear to be reluctant to open up courses for students from other Schools because this will detract from the resources available for their own students. In similar vein, there appear to be no clear ways of remunerating secondment of teaching faculty to programmes at other Schools; or the delivery of courses to programmes at other Schools. Part of the solution is to be found below, in Section 1.4.

1.4 Develop an Aalto University language for addressing resources

At its most fundamental level this is about establishing an understanding at programme, Department and School levels of cost and value drivers and then to develop a transparent language for communicating about resources. Immediate action should be taken

- To introduce *transfer pricing* in order to stimulate intra-Aalto student and faculty mobility.
- To work with Schools and their programmes to establish *knowledge about unit costs* at programme level. This is a prerequisite for optimizing available resources.
- To encourage a preparedness and ability to invest in activities the value of which may not materialize immediately (see e.g. section 1.5 below).

1.5 Investment in pedagogical competencies

We recommend that all AU teaching staff be pedagogically trained by dedicated School teaching and learning experts (as part of a wider AU pedagogical policy) who are attached to a central Aalto Learning Unit). Compulsory training tailored to the needs of specific disciplines and professions should be offered to all junior teaching staff (PhD students and assistant professors). All teaching faculty – also external teaching staff - should have access to and be expected to avail themselves of Continued Professional Development

opportunities, provided not only by AU and ASE but also from external sources.

At the ASE, classes of between 100–400 students are normal. While mass-lecturing in some circumstances can pave the way for learning, careful attention should be paid to providing teachers with the techniques and skills required to make this a worthwhile experience for students. At a more general level, we strongly encourage ASE’s teaching-related budget to reflect the need for much more widespread application of ‘laboratory pedagogy’. To be successful, modern business studies need students to work with real-life problems, to engage in project work in small teams and in face-to-face discussions with teachers, supervisors and companies, and to get feedback on individual homework, much of which requires teachers and supervisors to read and comment on assignments where no one answer exists. In other words, the current ASE student–teacher ratio, particularly in large 100–400 person compulsory core courses, strikes us as a major challenge for achieving world-class status.

1.6 Invest in more flexible classroom space, break-out rooms, and classroom variety

Excellence in Pedagogy comes from many factors, including adequate investment in pedagogical competencies, coupled with adequate “teaching friendly” classroom and other learning spaces, geared to the Bologna aim of smaller, more interactive, class sizes. The existing ASE Campus appears to have a lack of flexible classroom space capable of accommodating a variety of teaching methods and a shortage of adequate student break-out rooms and 24/7 study spaces, even if renovation of several of the buildings carried out in the late 1990s and early 2000 did improve the situation. (We did not have a complete campus tour of the classroom facilities.) For benchmarks against which to compare excellence in case classroom design, see the tiered classrooms used at RSM Erasmus, Stanford, Harvard, Darden, ESADE, and SDA Bocconi.

1.7 AU Alumni

Across AU we find that a sustained, decade-long commitment to developing a robust Aalto University Alumni Association is required. In Europe, universities do not have a well-established tradition for working with alumni. We strongly recommend AU to take the lead to establish an Aalto University Alumni Association. We encourage AU to benchmark best practices in alumni relations management at European institutions that have overcome the widespread European hesitance to include alumni as a key stakeholder, such as ESADE, Bocconi, SSE, and the LSE.

From conversations with employers, alumni and faculty members with a track record of working with the business community (for instance, in the context of Executive Education) we get the message that there is strong interest amongst alumni and in the business community for the new Aalto University and its potential. Actually, the excitement about the new AU amongst corporate representatives and alumni is in marked contrast to the sometimes not so enthusiastic response to the Aalto context among faculty members.

2 Recommendations/Feedback to the Aalto School of Economics Leadership Team

2.1 Articulation of ASE's Value Proposition to AU and vice-versa.

We find that there is a need for proactively *articulating*, internally at ASE and externally towards the AUELT, how ASE can leverage

- *its own strengths* through engaging with the broader AU;
- *the strengths of AU* by bringing its own strengths to bear on AU.

ASE is an internationally recognized business school, renowned for excellent research; it is internationally networked and respected for its triple crown (one of the few institutions worldwide that can boost AACSB, EQUIS and AMBA accreditation). It has much to offer Aalto University and a crucial role to play in the new organization. To unlock the potential, however, we encourage ASELT to take the lead in terms of stirring the imagination, and capturing the hearts of academic faculty, administrative staff and students, both at ASE and at the wider Aalto University community.

We suggest that the ASELT mobilize people from across the ASE with ideas about how to engage with the new Aalto University. The good practices observed during the evaluation exercise (see the attached programme evaluation reports) provide a good start for such an endeavour.

2.2 Instil an entrepreneurial culture

Universities in Finland and abroad are currently facing enormous changes that in critical ways challenge established ways of thinking and practising higher education. The combination of international competition for students and staff; a much more demanding dialogue with external stakeholders; increasing expectations about both relevance, excellence and performance, and dwindling public funding lead university leaders and rank and file academic staff everywhere to be rightly deeply concerned about resources. This is also the case at ASE. If there is one thing that popped up in all the self-evaluation reports and in all our interviews, it was the plea for more money.

We would, nevertheless, suggest that the ASELP work with key actors from across ASE – including Heads of Departments – to instil more of an entrepreneurial culture, i.e. support departments and faculty to look for *opportunities* and not only *obstacles* (even if they are very real); to work around problems rather than to wait for them to be solved; to look for openings; to seek out strategic space both at the ASE level and at department and programme levels. Entrepreneurship also means *not waiting for resources* to flow in before taking action. Entrepreneurship means *reallocating existing resources and organizing an active search for new resources*.

Again, ASE good practices provide inspiration for how to be innovative and proactive, also in the face of major challenges and few resources.

2.3 Implement Bologna

We strongly recommend that the ASELT take decisive steps to make *Bologna* happen.

First, Bachelor's and Master's programmes must be clearly *separated*. This is not the case today, with many MSc students not having graduated from their respective BSc programmes. (The typical issue appears to be extended delays in finalizing the Bachelor's thesis.)

Second, we identified *Learning Outcomes* as a significant topic that ASE – as well as AU – is strongly advised to address. We recommend that Learning Outcomes be systematically examined across all Programmes and that appropriate steps are taken to implement the principle of Learning Outcomes, which is central to achieving *student-centred learning*, already today the declared objective of ASE as well as AU. We enclose a brief overview of the concept of Learning Outcomes prepared by Panel member Simon Sweeney, UK Bologna Expert, York University, UK.

2.4 Get the new BSc and MSc programme portfolio in place

We recommend that the development of the *New ASE BSc programme as of 2013* be finalized soon. It is essential for departments and academic faculty to have a clear idea of the precise design and profile of this programme and their respective roles in delivering both this and the new interdisciplinary BA Aalto Programme. It is also essential for the planning and deployment of resources and the development of the new portfolio of Master's programmes, the contours and admission requirements of which must also be in place by 2013.

We encountered many different ideas and attitudes about what the new ASE BSE might mean in practice, and how it might affect the MSc offering, ranging from business as usual in slightly modified clothes to bold visions about a whole new foundation for ASE education.

In the case of its future MSc offering, ASE should take timely action to decide the *principles organizing the new ASE Master's*. Organizational principles include functional specialization, catering to the Finnish and/or international business community, national recruitment; international recruitment, and the adoption of a research orientation or a generalist orientation.

In all cases we recommend a *programme-driven design* for all programme elements, both at the Bachelor's and the Master's level. We also encourage ASE to carefully consider the future of the current Basic Studies component, which in some cases appears to be insufficiently internally aligned with the learning outcomes of individual programmes.

Finally, we recommend ASE to get on top of such transition rules that are required to handle students studying under 'old' study regulations, and those that will be studying under the true Bologna programmes, once these are launched in 2013.

2.5 Turn Students' part-time jobs into a resource

Students with part-time work are a fact of life: students need extra income and employers appreciate graduates who at the time of graduation come with practical experience from relevant jobs. However, in the programme self-evaluation reports, student jobs are almost universally referred to as a major problem, reducing the time and energy students are prepared to invest in their studies, and delaying graduation.

We encourage ASE to make an effort to accommodate *students' part-time jobs* in the programme design and turn them into *a resource in the curriculum and for learning*. To succeed, we suggest that ASE introduce more flexibility in the academic calendar, such as evening supervision, more summer offerings (e.g. three-week intensive courses – as in the Mikkeli programme – which would enable students to spread their studying more evenly across the year); more systematic encouragement to do internships (a way of concentrating a student's working activity to a limited period of time); and, crucially, 24/7 access to School study facilities, including the library; and optimizing virtual repositories.

However, despite the merits of a proactive embrace of students' part-time jobs, it remains crucial for ASE to manage students' expectations in terms of the amount of part-time work students can reasonably do. Similarly, accommodating students with part-time jobs also requires programme directors and teachers to flatten out the workload across the semester, avoiding peaks and troughs.

2.6 Students and alumni as partners in programme design and planning

At ASE it is mandatory to have at least one student member on the Programme Committees. In addition to this, some programmes benefit from very active student clubs who in various ways engage with their teachers and respective programmes. We encourage ASE more systematically to capitalize on *collaboration with students* in programme design and planning.

Students should also be involved in a highly overdue overhaul of the centrally coordinated electronic feedback system (see also above in the Student Feedback section).

Another widely untapped resource appears to be systematic involvement of alumni in the Aalto learning experience. We encourage Departments and Programme Committees to capitalize on collaboration with alumni in live cases, guest lecturing, internships, in assessment, mentoring, and as business angels.

2.7 Recruitment, promotion and pedagogical competencies

We recommend that ASE develop explicit and transparent criteria for evaluating pedagogical competencies when recruiting new academic staff and when promoting existing academic staff. ASE may also want to consider how different types of career tracks can help stimulate the development of world-class teaching faculty (e.g. by establishing different routes to a full professorship, one of which could emphasize excellence in teaching).

We recommend that ASE pay close attention to the continuous development of pedagogical competencies, institutionalizing appropriate schemes for Continued Professional Development (as part, hopefully, of an all-AU policy).

2.8 Relocation – the campus issue

At ASE, the proposed relocation of the ASE downtown Töölö campus to the Otaniemi Campus is a highly contentious issue. Both students and faculty point to the inherent advantages of the historical, downtown campus: the physical proximity to companies and corporate headquarters (strongly appreciated by students with part-time jobs and by those involved in Executive Education); the immediate access to a lively city (also appreciated by international students and staff); and buildings that embody the proud history of the old HSE.

On the other hand, many ASE students and faculty also recognized that increasing intra-Aalto mobility will remain a challenge for logistical reasons, even when a new Metro in a couple of years connects the two campuses. Moreover, the classroom and study-space facilities in the Töölö campus are not conducive to student-centred learning and need to be extensively renovated, upgraded and modernized. (Refer to Part C, 1.6 for specific recommendations about increasing classroom variety, sizes, and flexibility.)

We will not venture any recommendations on whether to relocate the ASE campus or not. Instead, we will encourage ASE to connect its thinking about (re)location to

its wider strategic objectives, letting the latter decide the former. In other words, let ASE's strategy (see section 2.1. above) drive the future location of ASE's activities and the campus facilities that will serve it best. We do encourage the ASE Leadership Team and AU's facility management and planning staff to survey the campus enhancement activities of Aalto's main competitors. Many CEMS schools have recently invested in major new facilities (costing upwards of 20–30 million Euros), providing modern undergraduate classrooms, faculty offices, library spaces, dormitories, recreation, dining, and residential learning spaces with state-of-the-art IT and communications systems upgrades.

Part D. Observations on the evaluation process and recommendations for improvement

We would like to emphasize that the evaluation process has been a highly qualitative exercise, and as such we hope it proves helpful for ASE and AU. The qualitative emphasis was, however, not quite apparent in the instructions we received before arriving.

The explanatory power of the data made available to us has been limited (e.g. very scant performance data (input-output)). We have therefore found it very difficult to venture authoritative grading of what different programmes do, even if we do come up with examples of poor/emerging/good etc. practices.

What we have tried to do is to share our observations with our interviewees, ASE and AU, highlight what we believe is good practice and provides food for thought, and, based on what we read, saw and heard, synthesize some of our observations into recommendations, the value of which only ASE and AU can decide.

On the programme level we would have liked to interview students separately from the professors.

We did appreciate the effort to place us in different parts of the Aalto campus and to have us “experience” working in buildings both at ASE and in the School of Science. This helped us compare and contrast the physical environments of the two campuses (Töölö and Otaniemi). However, we also felt that the programme was highly compact: the Panel would have welcomed more time to concentrate on interviewing, and processing input, and, especially, free time to write up preliminary impressions.

The Panel would like to thank ASE and AU for a highly stimulating week and excellent support during our visit. As professional educators, the team members learnt a lot and, crucially, thoroughly enjoyed the intense panel life. We left ASE and AU with deep respect for the Aalto University Vision and great hopes for ASE’s role in contributing to the realization of this vision.

Writing Learning Outcomes in Higher Education

by Dr Simon Sweeney, member of the Panel for the School of Economics

The ECON Panel identified **Learning Outcomes** as a significant topic that Aalto may wish to address. Indeed, the Panel recommend that Learning Outcomes be systematically examined across all Programmes.

The principle of Learning Outcomes is central to the application of the **European Credit Transfer System (ECTS)** in the European Higher Education Area (EHEA). Credits are awarded on the basis of students being able to demonstrate achievement of specified Learning Outcomes (*see ECTS User Guide* published by the European Commission).

Learning Outcomes should be identified at a Programme Level, i.e. each Programme has specified **Programme Learning Outcomes**, achieved through attainment of module (meaning ‘course’ in the Finnish context) learning outcomes throughout the period

of study. It is often easier to construct module learning outcomes than Programme Learning Outcomes, although some of the latter may be generic, especially those which refer to key skills achieved throughout the Programme.

The Learning Outcomes concept relates to the aspiration to make HE studies more transparent, benefiting students in choosing courses, and employers in understanding the real content of degree programmes. For this reason, clarity and precision in writing Learning Outcomes is essential, especially given that they must be clear to students themselves. Clear learning outcomes are integral to **student-centred learning**. They also benefit teaching staff, as they are a useful instrument in helping tutors find and deliver appropriate module content.

Learning Outcomes must demonstrate appropriate **progression** through levels according to the **European Qualifications Framework for Lifelong Learning** (Level 4, first year of a first cycle programme, or Bachelor's degree; 5 is second year; 6 is final year; 7 is postgraduate or Master's level). Thus, all first-year Bachelor's modules are described in terms of **equivalent** Learning Outcomes. All M-Level Modules also show equivalence.

The logic here is that Learning Outcomes are ascribed to Modules at appropriate stages of a degree in such a way that there is progression between levels, and **equivalence** between courses, between departments, and indeed between institutions. This means that Learning Outcomes, and the related ECTS, are vital instruments in international comparison, equivalence, value, and **recognition** of modules undertaken as part of a **mobility** experience, and indeed of degrees awarded.

A further dimension fundamental to the principle of Learning Outcomes is that **assessment** is designed to test achievement of learning outcomes. The grades assigned to student work show the extent to which Learning Outcomes have been achieved, i.e. not achieved (Fail); adequately achieved (Pass); well achieved (Merit); achieved to the highest standard (Distinction).

Key principles in writing Learning Outcomes

The language used is specific and expresses the level of difficulty and sophistication. For example, a Learning Outcome at Level 4 may begin with Recognise or Show awareness of, whereas a Level 6 Learning Outcome may be expressed *by Evaluate critically...*

Module tutors and programme leaders should be involved in writing Learning Outcomes, while tutors new to a module need to be fully acquainted with them.

Learning outcomes should be made available to students, understood by students and further explained at the beginning of modules as appropriate/necessary.

Assessment should overtly test the achievement of Learning Outcomes.

Module documentation (validated documents) should be publicly available on the web and should include Learning Outcomes.

Learning outcomes for a 10 ECTS credit undergraduate module should not exceed four, and should probably be no less than three.

A learning outcome should not contain more than one desired outcome (the word and in a Learning Outcome is usually a warning light).

An exception to the last point is *Compare and contrast... or Explain and justify*, useful combinations in expressing Learning Outcomes (perhaps at Level 5).

Learning outcomes should be typically introduced by the phrase *By the end of the module, students will be able to...*

Examples of Learning Outcomes - BA Business Management

Level 4 module – Introduction to Management

By the end of the module students will be able to

- Demonstrate understanding of core management theories
- Identify core functions of company management
- Apply logical decision making to specified commercial challenges

Level 5 module - Business Policy and Strategy

By the end of the module students will be able to

- Explain and justify the rationale for specified policy decisions
- Compare and contrast alternative strategies for company growth
- Undertake contrastive analysis between different business strategies

Level 6 module - Human Resource Development

By the end of the module students will be able to

- Critically examine different human resource problems in corporate management
- Analyse theoretical approaches to staff training
- Suggest comprehensive solutions to complex human resource Case Studies

Examples of Learning Outcomes - MA International Business

Level 7 International Business Environment

By the end of the module students will be able to

- Show detailed understanding of external factors affecting multinational corporations
- Critically evaluate different entry methods for international markets
- Undertake critical analysis of complex case studies
- Assess the impact of international market regulation

Level 7 Emerging Market Analysis

By the end of the module students will be able to

- Undertake detailed comparison between emerging markets
- Assess risks and opportunities in specific developing countries
- Perform critical analysis of specific investments in emerging markets

Sources for further information

Dr Suzanne Gatt, University of Malta

<http://llp.eupa.org.mt/files/Learning%20Outcomes%20-%20Suzanne%20Gatt.pps>

See also **Bloom's Taxonomy** (Google this to find a wheel containing words typically used in writing Learning Outcomes).

Also <http://staffdev.ulster.ac.uk/index.php?page=writing-learning-outcomes> and from the University of Swansea, Example Learning Outcomes for Approved Modules <http://www.swansea.ac.uk/registry/qualityassuranceandenhancement/introducingmodulesandprogrammes/guidancenotesonwritinglearningoutcomes/#>

Also (Google) Kingston University Guide to Writing Learning Outcomes

The Higher Education Academy www.heacademy.ac.uk is a resource on Learning Outcomes

See also Official Bologna Process website 2007-2010 at <http://www.bologna2009benelux.org>

Verbs for Learning Outcomes

Finding the right words for use in writing learning outcomes/assessment criteria can be difficult, particularly when the statements must mesh with the generic level descriptors. The following list is provided as an aid in this process. The words are organised for convenience under a heading that might be seen to accord with those from Bloom's Taxonomy. However, no strict hierarchy is intended here. The words are simply a vocabulary list gleaned from a variety of sources to help you write learning outcomes and assessment criteria.

Verbs which require evidence of Knowing:

Define, describe, identify, label, list, name, outline, reproduce, recall, select, state, present, be aware of, extract, organise, recount, write, recognise, measure, underline, repeat, relate, know, match

Verbs which require evidence of Comprehension:

Interpret, translate, estimate, justify, comprehend, convert, clarify, defend, distinguish, explain, extend, generalise, exemplify, give examples of, infer, paraphrase, predict, rewrite, summarise, discuss, perform, report, present, restate, identify, illustrate, indicate, find, select, understand, represent, name, formulate, judge, contrast, translate, classify, express, compare

Verbs which require evidence of Knowledge/Understanding:

Apply, solve, construct, demonstrate, change, compute, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, use, give examples, exemplify, draw (up), select, explain how, find, choose, assess, practice, operate, illustrate, verify

Verbs which require evidence of Analysis:

Recognise, distinguish between, evaluate, analyse, break down, differentiate, identify, illustrate how, infer, outline, point out, relate, select, separate, divide, subdivide, compare, contrast, justify, resolve, devote, examine, conclude, criticise, question, diagnose, identify, categorise, point out, elucidate

Verbs which require evidence of Synthesis:

Propose, present, structure, integrate, formulate, teach, develop, combine, compile, compose, create, devise, design, explain, generate, modify, organise, plan, re-arrange, reconstruct, relate, re-organise, revise, write, summarise, tell, account for, restate, report, alter, argue, order, select, manage, generalise, précis, derive, conclude, built up, engender, synthesise, put together, suggest, enlarge

Verbs which require evidence of Evaluation

Judge, appraise, assess, conclude, compare, contrast, describe how, criticise, discriminate, justify, defend, evaluate, rate, determine, choose, value, question

Appendix A4

The School of Electrical Engineering

Automation and Systems Technology

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel recognizes the substantial work that has gone into the preparation of the self-evaluation report, and hopes that the discussions leading up the submission of the report and our interviews have been fruitful for the contributors. The Panel concludes that the programme has a strong technical engineering content, a motivated staff and good students. However, there are a number of recommendations for improving the design of the programme, making it even stronger and remedying many of the observed weaknesses and drawbacks.

The programme is designed and implemented by one department leading to a leaner process when executing and changing the contents of the programme. The Panel also saw very committed, mainly well-motivated and open-minded teachers with a very solid scientific background. However, the tight connection between programme and department also highlights a need for extra attention to interdisciplinary cross-Aalto possibilities and opportunities.

An emerging understanding of learning as opposed to teaching is detected and needs to be nourished in order to move forward. The departments and programme have close connections to interaction with industry, thus leading to large benefits in stating relevant projects and including real-life problems in the teaching. However, this has to be balanced by stringent use of an academic component in order to push the students to reach a proper academic level. On the contents level there is interaction between research, the department and the teaching, but the full potential of this may not yet be explored on the structured methodological side.

The learning outcomes of the programme are defined, giving a solid basis for the further systematic development of the structure and contents of the programme. Finally, the Panel noticed an awareness of the potential for improvement, for instance, being materialized in planning of the first-year course “Hands-on Course in Basic Automation and Robotics” and the planning of the courses in the area of “Control and Signal processing”, which is a welcome initiative to motivate students. Furthermore, an emerging attention to the use of more modern teaching and assessment methods that gives the students a more stable workload was observed, along with a focus on giving feedback to the students.

2. Evaluative feedback

During the last five years or more there have been substantial developments on an international scale in the methods related to the themes evaluated here, so methods

that a few years ago would have been considered 'good' or 'excellent' today on this international scale would get a poorer rating, leaving room for improvement and development that resulted in improved results. The grades given in the self-evaluation reports would relate to the 'old' scale and therefore the Panel find it difficult to assess the performance on the same scale. The Panel would rather give input as to which emerging practices in the three themes it would be beneficial to evolve.

a. Degree programme planning and management (questions 1-8)

The degree programme management is on a good level. Connection between research and teaching seems to be very good with a tendency towards 'excellent', but clear procedures of describing it have not yet been implemented. The degree programme outcomes are well described formally, but they focus on the actual content and not on the learning outcomes. The links between learning outcomes and courses/modules and in between courses are partially visible. Supporting competence and professional development for students on a research track is on a good level, where the career development and mentoring part seems unsystematic.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The basic studies are on a good level with good learning outcome. Teaching methods seem to need improvement. Student guidance is on a good level. Teaching the tutors seems necessary to avoid large heterogeneity and common pitfalls in the tutoring. Extending tutoring to the Master's level would be beneficial. Support for learning and providing feedback is emerging. Teaching methods are partially good with attention given to project work and other more modern methods. Assessment methods and learning feedback are emerging. Teaching resources are on average very good, with some parts having even excellent resources.

c. Degree programme evaluation and development (questions 17-22)

Student feedback systems seem to be inadequate at the moment (although it has been better before). The introduction of a dedicated and adequate student feedback system is recommended. Co-operation among teachers seems to be good. Pedagogical competence is emerging.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The planned introductory courses for first-year students in Automation and Robotics.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Excellent facilities.

c. In degree programme evaluation and development (questions 17-22)

Integration of disciplines: The planned course on Electronics and analog control.

School level: OpLaa.

4. Recommendations for improvement

Short term:

- Events/meetings to integrate staff and students on both a formal and an informal level.
- Structured communication of strategies and goals to all staff and students.
- Embracing the ideas of the Bologna model, explaining the ideas to all staff and including them in the process of change.
- Seminars on self-management and prioritization of teaching work.

Long term:

- Modern teaching and assessment types giving an increased, more motivating and more equal workload for the students.
- Adjustments to the degree programme to include elements from Economics and Arts & Design.
- Enabling prioritization of tasks by the staff and further developing more efficient teaching and assessment methods.
- More transparent allocation of resources on the department level.
- More focus on internationalization and mobility as an investment for the students in their CV and for attracting top foreign students to challenge and motivate the Finnish students. In the long run all MSc programmes might be taught in English.

In addition to the above programme-specific suggestions, the Panel would like to make the following general remarks, which are of relevance for several programmes.

Tutoring:

The Panel cannot appraise the overall effects of the student guidance measures. The quality of the counselling/tutoring varies with the ability of the individual teacher to do it well, and the students' interest in participating. It could be suggested that a more systematic approach should improve the student guidance. But the Panel would rather encourage a discussion on the effectiveness of the strategy. It might be more resource-effective to make the primary processes (the programmes and courses) function well, rather than increasing the support system.

Assessment:

In general, assessment is often done through closed-book examinations intended only to measure student learning at the end of the course. There is a lack of insight into the key role of assessment in influencing (positively and negatively) student expectations and motivation, and approaches to study, as well as the actual volume, quality and timing of studies. The negative effects of poorly designed assessment practices were evident and the use of well-designed assessment to guide student learning and provide feedback is too little exploited.

Books:

In general, the Panel found that course literature in the form of books or papers was rarely read by the students, due to poor alignment of literature within the course and especially with assessment. Even when there was a course book assigned, students

could still get by - in the narrow sense of passing the course - using only lecture note handouts. This is a worrying sign, as it should be part of a university degree to be able to read specialist literature.

Bioinformation Technology

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

First of all: People have done an excellent job in a very short time to prepare the self-evaluation.

- Students and teachers are highly motivated and committed.
- There is a very strong scientific and engineering basis for the programme.
- Students and teachers see the chances that the new Aalto brings them and have great hopes that positive changes will be connected to the new start of Aalto.
- The programme attracts top-level students and about 30% continue as PhD students.
- There is a clear focus and very good implementation of the connection between research and teaching.
- Teachers are very interested in trying new ways of teaching and have started doing so.
- Although extending to three Schools and eight Departments, the management is good. The interdisciplinary nature of the programme is a clear strength but also requires additional attention to achieve the intended programme outcomes.
- Systematic effort is put into programme management and development.
- The consecutive Bachelor's and Master's programme forms a very good identity; students are proud of being BioIT students.

2. Evaluative feedback

During the last five years or more there have been substantial developments on an international scale in the methods related to the themes evaluated here; therefore, methods that a few years ago would have been considered 'good' or 'excellent' today on this international scale would get a poorer rating, leaving room for improvement and development resulting in improved results. The grades given in the self-evaluation reports would relate to the 'old' scale and therefore the Panel find it difficult to assess the performance on the same scale. The Panel would rather give input as to which emerging practices in the three themes it would be beneficial to evolve.

a. Degree programme planning and management (questions 1-8)

The degree programme management is on a good level. Connection between research and teaching seems to be very good with a tendency to 'excellent', but clear procedures of describing it are not yet implemented. The degree programme outcomes are partially well described formally, but they focus on the actual content and not on the learning outcomes. Priority was given to the preparation of the approximately 30% continuing

as PhD students. The links between learning outcomes and courses/modules and in between courses are partially visible. Supporting competence and professional development for students on a research track is on a good level, where the career development and mentoring part seems unsystematic.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The basic studies are on a good level with good learning outcome. Teaching methods seem to need improvement. The problem of entrance level differences might be tackled with pre-courses or with a different student selection scheme. Student guidance is on a very good level. Teaching the tutors seems necessary to avoid large heterogeneity and common pitfalls in the tutoring. Support for learning and providing feedback is emerging. Teaching methods are partially good with attention given to project work and other more modern methods. The Bachelor's degree needs to be better integrated into the consecutive Bachelor's/Master's programme or a five-year Master's (no Bachelor's in between) needs to be realized (as, for example, in France). Assessment methods and learning feedback are emerging. Teaching resources are on average very good, with some parts having even excellent resources.

c. Degree programme evaluation and development (questions 17-22)

Student feedback systems seem to be inadequate at the moment (although it has been better before). The introduction of a dedicated and adequate student feedback system is recommended. Co-operation among teachers seems to be good. Pedagogical competence is emerging.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

BECS Teacher's Café.

The biannual workshop with the teachers and employers.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Special Assignments.

The Bachelor's thesis scientific conference.

c. In degree programme evaluation and development (questions 17-22)

School level: OpLaa.

4. Recommendations for improvement

A good Master's builds on a solid Bachelor's. We would not recommend discontinuing the Bachelor's in BioIT. If the Bachelor's programmes in ELEC are merged, BioIT will need a separate study plan.

Separate physics courses might improve the learning outcome for BioIT, but from the point of view of Aalto a general improvement in all physics teaching would be a better solution.

Short term:

- The international guidelines for BioENG/BioIT (e.g. IFMBE, EAMBES) should be considered in further developments of the programme.
- People from industry should be included to give motivational teaching in the first year.
- Students' feedback: they don't know about their job perspectives and see this as a big problem. The approximately 70% of the students not going to be PhD students need a clear perspective and the programme should develop this.
- For each study year and programme a student feedback discussion round could be organized.

Long term:

- It is important to continuously support the process of pedagogical training that has been started.
- The teaching evaluation should be implemented as a continuous process. Teaching should be valued and rewarded and teachers need motivation.
- Integration of industry into curriculum development would help to shape the programme.
- Systematic feedback on learning outcome and curriculum from alumni after 1, 5, 10 years (or so) is recommended.
- Continuous communication to all students, teachers, and management staff in the programme and inclusion of their feedback should be functionalized.
- The learning environment for group work needs to be improved Otakaari 5.

In addition to the above programme-specific suggestions, the panel would like to make the following general remarks, which are of relevance for several programmes.

Tutoring:

The Panel cannot appraise the overall effects of the student guidance measures. The quality of the counselling/tutoring varies with the ability of the individual teacher to do it well, and students' interest in participating. It could be suggested that a more systematic approach should improve student guidance. But the Panel would rather encourage a discussion on the effectiveness of the strategy. It might be more resource-effective to make the primary processes (the programmes and courses) function well, rather than increasing the support system.

Assessment:

In general, assessment is often done through closed-book examinations intended only to measure student learning at the end of the course. There is a lack of insight into the key role of assessment in influencing (positively and negatively) student expectations and motivation, approaches to study, as well as the actual volume, quality and timing of studies. The negative effects of poorly designed assessment practices were evident and the use of well-designed assessment to guide student learning and provide feedback is too little exploited.

Books:

In general, the Panel found that course literature in the form of books or papers was rarely read by the students, due to poor alignment of literature within the course and especially with assessment. Even when there was a course book assigned, students could still get by - in the narrow sense of passing the course - using only lecture note handouts. This is a worrying sign, as it should be part of a university degree to be able to read specialist literature.

Communications Engineering and Master's Programme in Communications Engineering

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The programme management in Communications Engineering have made a good job with their self-evaluation report. The analyses are clear and insightful, and provide constructive solutions to the various challenges that the programme encounters. It is clear that the programme management has worked a lot with their analysis of the programme, and are able to present the results concisely.

The Panel has identified the following strengths of the programme:

- The programme has recently performed a top-down redesign, using an outcome-based approach. This has resulted in a clear structure and well-related courses at the Master's level.
- There is a clear connection between research and education, particularly at the Master's level. The programme has several implemented models for integrating research and scientific methods in the education.
- There is pedagogical capability and attitude among the teachers and programme management.
- The students have many courses to choose from, providing ample opportunities for the individual student to tailor the education to his or her own interests.
- The programme is set in an international environment. This is evident by the students from the coexisting international Master's programme (up to 50% on some Master's courses), and the readiness to accept courses from outside Aalto for the individual student. The programme makes use of Aalto's exchange programmes and has made agreements on double-degree programmes with foreign universities to facilitate international mobility for its students.
- The subject of the programme has clear industrial relevance. Workplace and stakeholder feedback is collected, and made to influence the strategies. The programme displays understanding of the need to balance external interests with internal values.

The programme is operated mainly by two Departments, where one plays a more significant role. Whereas this makes it easier to coordinate the programme, it also poses questions as to which extent the programme is agile enough to incorporate neighbouring subjects and invite them to the pedagogical discussion when needed.

2. Evaluative feedback

The Panel would like to make this general remark with regard to the scales:

During the last five years or more there have been substantial developments on an international scale in the methods related to the themes evaluated here, and so methods that a few years ago would have been considered 'good' or 'excellent' today on this international scale would get a poorer rating, leaving room for improvement and development that result in improved results. The grades given in the self-evaluation reports would relate to the 'old' scale and therefore the Panel finds it difficult to assess the performance on the same scale. The Panel would rather give input as to which emerging practices in the three themes it would be beneficial to evolve.

a. Degree programme planning and management (questions 1-8)

Overall good.

The programme has recently been restructured using a top-down approach, starting with the learning outcomes at the Master's level and breaking them down to year 1, while recognizing the need for iterations. Efforts remain in planning study-time allocation, and the current state of change at Aalto causes some confusion. The programme management has an open, tolerant attitude towards flexibility of studies and international mobility. The programme seems to have many courses of only a few credits, leading to many parallel courses for the students at the end of their studies.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Overall (emerging) – good.

Several courses in the programme have been honoured by OpLaa for good teaching, and the students agree that teaching is good in general. However, both programme management and students agree there could be more variations in teaching and assessment methods, where lecture-based courses ending with a written examination still dominate. For the first year, meetings are held with relevant departments at the School of Science to co-ordinate the basic studies. Teacher tutoring and a personal study plan are intended to improve the students' motivation and overview of the programme. The Panel appreciates the awareness of constructive alignment, and of using assessments designed so that the student cannot avoid learning. The emerging implementation seems promising.

c. Degree programme evaluation and development (questions 17-22)

Overall (emerging) - good.

The methods for obtaining feedback from students can be improved and used more frequently. It is not clear to the students where to report problems with courses so that action can be taken. There is good contact with industry, and an understanding of balancing short term trends with a decade-perspective of learning. The Comnet Department arranges biannual teaching development days. The many short-term contracts among the teaching staff create unstable conditions for providing and developing education. Several teachers have attended pedagogical training, and have started implementing new methods in their courses.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The top-down programme planning has led to well-related Master's level courses.

Dual-degree programme agreements with non-Finnish universities demonstrate international alignment and bench-marking.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Biannual teaching development days are arranged to disseminate information among the teachers and to coordinate the curriculum development work.

The programme describes several examples of connecting teaching with research, following different dimensions.

The programme management and several teachers have attended pedagogical training and display an interest in teaching.

c. In degree programme evaluation and development (questions 17-22)

The Comnet Department has formulated a research strategy (5-10 years) that is also influencing the planning of education.

To analyse the low throughput at the beginning of the programme, an interview programme was carried through (interviews with first-year students, analysis, and suggestions for action).

In recent years, several academic theses have been written about teaching methods supporting the learning of communications engineering.

4. Recommendations for improvement

Short term

- Present a clear contact point to the students as to where report problems with courses. Also define who is responsible for improvements.
- Introduce more variation in teaching and assessment methods (which is also a long-term mission).
- The modules are regarded as inflexible and there should be a useful structuring of the programme. Using a more flexible attitude to the module system, e.g. a variable number of total credits and a simple system for students to change single courses.
- The present funding system is not transparent, and needs to be explained to teachers and management.

Long term

- The start of the programme can be improved. Much has already been done, in particular on an individual level with the tutoring system, but further improvements concern the motivation of both students and teachers (both at the School of EE and other schools), and investigating to what extent more programme-specific content can be presented in year 1. Can the teaching development days, which are now held only within Comnet, be extended to include representatives from all Departments and Schools associated with the programme?

- The programme contains many small courses. This may lead to many parallel courses, particularly for students at the Master's level, and concerns can be raised about the cost of delivering that many courses. The programme could consider combining course themes to form larger, broader courses.
- Several teachers seem to have short-term contracts, meaning few teachers can be involved in long term development. Although this is a reality most universities experience today, Aalto could consider creating strategies for ensuring continuity of staff participating in education.
- Lab facilities for basic teaching should be improved. It seems that industry would be willing to contribute here.
- There is an emerging pedagogical awareness and community, which needs to be nurtured. Some suggestions are to evaluate pedagogical skills for decisions about hiring and promotion, to introduce award systems for good teaching, and activities like teaching development days, and to seek constant encouragement from the leadership at all levels. All this demands commitment and takes a long time. The Panel considers OpLaa's achievements over more than a decade a good starting point.

In addition to the above programme-specific suggestions, the Panel would like to make the following general remarks, which are of relevance for several programmes.

Tutoring:

The Panel cannot appraise the overall effects of the student guidance measures. The quality of the counselling/tutoring varies with the ability of the individual teacher to do it well, and students' interest in participating. It could be suggested that a more systematic approach should improve student guidance. But the Panel would rather encourage a discussion on the effectiveness of the strategy. It might be more resource-effective to make the primary processes (the programmes and courses) function well, rather than increasing the support system.

Assessment:

In general, assessment is often done through closed-book examinations intended only to measure student learning at the end of the course. There is a lack of insight into the key role of assessment in influencing (positively and negatively) student expectations and motivation, and approaches to study, as well as the actual volume, quality and timing of studies. The negative effects of poorly designed assessment practices were evident and the use of well-designed assessment to guide student learning and provide feedback is too little exploited.

Books:

In general, the Panel found that course literature in the form of books or papers was rarely read by the students, due to poor alignment of literature within the course and especially with assessment. Even when there was a course book assigned, students could still get by - in the narrow sense of passing the course - using only lecture note handouts. This is a worrying sign, as it should be part of a university degree to be able to read specialist literature.

Electronics and Electrical Engineering and Master's Programmes in Electrical Engineering and Micro and Nanotechnology

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Panel appreciates the considerable work that lies behind the writing of the self-evaluation reports according to a pressured time-schedule, particularly for a programme with many participating departments, and hopes that the discussions during the preparation and our interviews have been inspiring and brought many ideas for the future. The Panel identifies a programme which is very strong and flexible on the content level, and suggests a number of points for improving the programme, mainly on a structural and pedagogical level.

The Panel has identified the following strengths of the programme:

- There is a clear connection between research and education, particularly at the level of content. The programme has experience of integrating research and scientific methods in the education.
- There is emerging awareness of different teaching methods, and outcomes-based curriculum design procedures.
- There is emerging pedagogical capability and attitude among teachers and programme management, and the need for alternative pedagogical approaches is consistently identified by the programme.
- The programme offers a broad range of majors in the field of electronics and electrical engineering. Together with a tolerant attitude to include courses from other programmes, domestic and international universities, this gives the individual student excellent opportunities to tailor the education to his or her own interests.
- The programme includes several international activities, such as three Master's programmes (of which two were included in the evaluation) and a flexibility to include courses from other universities, as well as welcoming students from other universities.
- The subjects of the programme cover a broad field with clear industrial relevance. The Master's theses are often made in co-operation with industrial parties.

The programme involves several departments, and whereas this provides a broad and flexible programme, it also poses challenges with respect to management and coordination. This cannot be done in one's "spare time", and the programme management needs to have suitable resources for this task. The Panel recognizes large differences across the programme in physical resources like teaching facilities and laboratory equipment, as well as human resources like teachers with relevant pedagogical training.

2. Evaluative feedback

The Panel would like to make this general remark with regard to the scales: During the last five years or more there have been substantial developments on an international scale in the methods related to the themes evaluated here, so that methods that a few years ago would have been considered 'good' or 'excellent' today on this international scale would get a poorer rating, leaving room for improvement and development that resulted in improved results. The grades given in the self-evaluation reports would relate to the 'old' scale and therefore the panel finds it difficult to assess the performance on the same scale. The Panel would rather give input as to which emerging practices in the three themes it would be beneficial to evolve.

a. Degree programme planning and management (questions 1-8)

Overall: emerging.

The programme management already displays an awareness of outcomes-based curriculum design procedures, and the prospect of applying them to this programme is promising. The definitions for the outcomes of the programme have mostly evolved during the long history of the degree programme, and even though the programme has a good reputation, the learning outcomes should be discussed in the context of today. Clearly a lot of work has gone into the coordination of the programme, as many departments have to agree on the programme structure and details, and efficient systems for this cooperation need to be developed. There seems to be a lack of a systematic approach to combine learning outcomes for different courses with the whole programme.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Overall: emerging.

There is growing awareness that pedagogical approaches are necessary to develop the quality of the programme and its courses. There is good practice in course development on the individual level, which needs to be recognized and supported. When it comes to cost-effectiveness and feasibility of new pedagogical methods there is clearly a need of pedagogical know-how. In this programme, new methods are underutilized because they are incorrectly considered as more expensive or requiring more resources than the traditional model. The Panel wishes to mention that the OpLaa started in the context of this programme, and some persons are very involved in this activity. The total quality of the programme can only substantially increase if a systematic approach is used instead of only relying on individual actions.

c. Degree programme evaluation and development (questions 17-22)

Overall: emerging – good.

The programme has a long tradition of collecting feedback from students, both at the end of a course and in some cases midway. The systematic use of this information to improve the quality of courses, and communicating the results to the students, needs better implementation. Co-operation among teachers could be more systematic, and aim more at promoting the programme outcomes rather than just reducing overlap between courses. The many short-term contracts among the teaching staff create unstable conditions for providing and developing education. The main work of most

of the staff is related to research, and the value of teaching has to be increased. Many teachers have attended basic pedagogical training and show great commitment.

The Department of Electrical Engineering launched a teaching strategy project in November 2010. The aim of the project is to define and justify what kind of competence and expertise the electrical engineering studies should produce. This is a promising project, but it is too early to see the results.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The programme displays a flexible and tolerant attitude to individual students to tailor the education to their interests.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The three-zero rule in examinations is a clear rule, which stimulates more active studying in some courses. The Department of Radio Science and Engineering is currently preparing two doctoral dissertations about electromagnetics education.

c. In degree programme evaluation and development (questions 17-22)

The programme makes repeated use of the OpLaa for improving its courses.

4. Recommendations for improvement

Short term:

- The programme management needs to develop better tools and systems for programme design and deployment, including large-scale issues like the breakdown of programme learning outcomes to course level and small-scale issues like the distribution of the workload in modules.
- The modules are experienced both as inflexible and as a useful structuring of the programme. The Panel suggests a more flexible attitude to the module system, e.g. a variable number of total credits and a simple system for students to change single courses.
- There is a need to present a clear contact point where students can report problems with courses, as well as defining who has the responsibility to act on these issues.
- The programme or the Departments may consider collaborating with industry to increase the possibilities of obtaining laboratory equipment for teaching.
- The present funding system is not transparent, and needs to be explained to the staff, since a limited understanding of the supporting structures for teaching does not motivate them.

Long term:

- There should be increased co-operation and all kinds of discussions, not only inside EST and in the School of Electrical Engineering but also with the teachers of mathematics and physics. More focus should be put on promoting the programme outcomes.

- The programme should consider how to integrate different subjects, for instance in terms of interdisciplinary projects.
- More variation in teaching and assessment methods should be introduced. This requires persistent pedagogical training, and many seeds are already growing in separate courses.
- Lab facilities for basic teaching should be improved. It seems that industry would be willing to contribute here.
- There is an emerging pedagogical awareness and community, which needs to be nurtured. Some suggestions are to evaluate pedagogical skills for hiring and promotion decisions, introduce award systems for good teaching, and activities like teaching development days, and constant encouragement from the leadership on all levels. This will demand commitment and take a long time. The Panel considers OpLaa's achievements over more than a decade a good starting point.

In addition to the above programme-specific suggestions, the Panel would like to make the following general remarks, which are of relevance for several programmes.

Tutoring:

The Panel cannot appraise the overall effects of the student guidance measures. The quality of the counselling/tutoring varies with the ability of the individual teacher to do it well, and the students' interest in participating. It could be suggested that a more systematic approach should improve student guidance. But the Panel would rather encourage a discussion on the effectiveness of the strategy. It might be more resource-effective to make the primary processes (the programmes and courses) function well, rather than increasing the support system.

Assessment:

In general, assessment is often done through closed-book examinations intended only to measure student learning at the end of the course. There is a lack of insight into the key role of assessment in influencing (positively and negatively) student expectations and motivation, and approaches to study, as well as the actual volume, quality and timing of studies. The negative effects of poorly designed assessment practices were evident and the use of well-designed assessment to guide student learning and provide feedback is too little exploited.

Books:

In general, the Panel found that course literature in the form of books or papers was rarely read by the students, due to the poor alignment of literature within the course and especially with assessment. Even when there was a course book assigned, students could still get by - in the narrow sense of passing the course - using only lecture note handouts. This is a worrying sign, as it should be part of a university degree to be able to read specialist literature.

Part B. Feedback and recommendations for the students of all degree programmes of the School

Let us extend warm thanks to the student representatives from the programmes at the School of Electrical Engineering who the Panel had the privilege and pleasure of interviewing. Hearing your straightforward accounts of experiences, and comparing it with the other perspectives, helped us triangulate, and helped us achieve stereoscopic vision. Meeting you was also a reminder of why this evaluation exercise is important, and, indeed, why it is important to improve engineering education in general. The quality of the learning outcomes you achieve at university, and more generally who you become by your education, will help empower you for life. The Panel believes that it is possible for Aalto to provide even better education in the future.

As an evaluation Panel, our starting point for improving engineering education is not only to stick up for the students, but to take *all stakeholder perspectives* into account. There are several groups who have legitimate claims on engineering education. External stakeholders, like employers and society in general, are mainly interested in the *outcomes* - that the graduates will be able to contribute to a society and work life which is sustainable in economic, social and environmental terms. In addition, taxpayers rightly demand value for money. Students and faculty are, of course, also interested in the outcomes, but as the main internal stakeholders we also share an additional interest in the *teaching and learning processes* in the programmes. These are our responsibilities and they have to work for us.

When we asked you to describe the best learning experiences in your programmes, you mentioned courses that:

- combine theory and practice in a way that they give each other meaning;
- provide a structure with activities that help you get going and keep working during the course. That also helps you know how you are doing; it is one way of getting feedback;
- base themselves on hard work and take a lot of time, but make you really learn and grow;
- have an open and positive climate with dialogue and discussion;
- are well-organised, with good materials which are updated and easily accessible.

These are indeed some of the course characteristics that are known to contribute to solid understanding and lasting learning. It was a joy to hear about these learning experiences.

It is important to also point out that some course features that students praised during the Panel meeting, or when giving feedback in courses, should not be recommended, because they are not optimal for learning. Sometimes student suggestions are based on an approach where passing the course has become the primary goal, forgetting that learning is actually what it is all about. (In fact, poorly designed courses can encourage this approach.) Therefore, before student feedback and input can be used to inform course development, it must always be interpreted from a *learning perspective*.

Teachers must have pedagogical integrity. Do not just give the students what they want - give them something better!

We noticed that the ubiquitous explanation model for most problems in programmes and courses was that “students are not motivated”. We do not agree. Instead, we firmly believe that what may look like “unmotivated students” are mainly symptoms of poorly designed courses. There is clear evidence in this evaluation that, to some extent, these poor teaching practices exist:

- Passive course formats lacking engaging teaching/learning activities.
- Lack of feedback during the course.
- Lack of the use of assessment as a driver for learning.
- Stunningly sloppy assessment procedures, like re-using the same examination questions.
- Teachers who say or show that they are not interested in teaching (known as “unmotivated teachers”, which is also not true, but we’ll get to that).

The good news is that it is fully possible for the University to shape an organization which can do better. Actually we think that the opportunity and conditions for achieving the necessary changes could hardly be better than they are at Aalto today. Our recommendations to the leadership of the School and of Aalto University are in the next section. As student representatives you are part of that leadership structure so you can proactively promote these changes.

There are three factors which can really increase the reach of your influence: the first is *continuity* - being able to drive issues over several generations of student representatives, the second is *knowledge* - about how the system works and, especially now, what the alternatives could be - and the third is *timing* - to understand what issues that are actually possible to change right now, and prioritize them above everything else. Over the coming years it is likely that it will be possible to influence most things at Aalto. The pace will be high, so the windows of opportunity will be short because the organization needs to move fast.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

Remarks on the change process

Aalto University and its Schools face the unique situation that there is now opportunity, motive and means to achieve a new mission. The Panel has seen widespread courage and excitement for this change process in the organisation, as well as apprehension and scepticism - the latter on a normal and healthy level.

There exist common expectations that extra funds should be spread through the organisation to do what the Panel would label as “more of the same”. Instead, it must be clearly communicated that funds will be temporarily applied in supporting a transition to new ways of working, and only the transition in itself. The new modes of working which are developed must be cost-effective so that steady state operations can be sustainably financed. The approach is to begin with the end in mind: in five years’ time and on the normal resource level, how will a degree programme be operating at Aalto? What do we need to do to get there?

The (relatively) easy part of any change process is to design and start new activities; the hard part is to release resources from the status quo, allowing resources to be reassigned to the new ways of working. This is hard because there are vested interests in the organization, and it is always tempting to use expansion as a strategy to avoid conflicts - doing the new things on top of the old ones. That is unhealthy in the long run, so the advice from the Panel is to refuse to allow any extra resources to keep you from challenging the status quo.

Recommendations

Based on what we learned about education at the School of Electrical Engineering it is the Panel’s conviction that what is most needed for education at Aalto is to create three kinds of structures on the university level, structures that support the mission by empowering the Aalto faculty and staff to develop world-class education aligned with the mission.

1. Career and incentive structures

It is the impression of the Panel that the career system is seen as exclusively privileging research merits. In order to support the Aalto mission, documentation, appraisal and reward of teaching skills should be a key element of all appointment and promotion systems, including tenure track. It is further important to recognize the value of faculty competence related to the professional relevance of engineering education. To reduce the tensions between “old” and “new” people, career systems are also needed to encourage development of existing faculty and staff.

It is important to apply a strategic perspective on the nature of teaching skills that should be required. The traditional view on what a good teacher is, one who can lecture well and is liked by students, is far too narrow and will not be sufficient even to sustain the present quality. Teaching skills must be seen in the light of the challenges

that engineering education is facing, and in light of what Aalto has set out to achieve: teachers must be able to contribute constructively to achieving the mission.

Eligibility requirements for any teaching staff should include education on teaching and learning in higher education, and the excellence of the pedagogical courses that the University provides must be ensured. Requiring pedagogical training is not only a way to strengthen the collective pedagogical competence of the faculty; it is also an efficiency consideration. Anyone can improve a course if it means that the teacher should work a hundred extra hours; to improve learning outcomes by reallocating the existing resources takes pedagogical know-how.

Appointment and promotion systems are the most important strategic management tool that exists. Its use is complicated by the fact that it is applied case by case - it has to work well every time. Not only does it select who comes aboard to help run the ship, it also communicates values, and on the individual level it influences everything from identity and status to how they choose to spend their time every day.

2. Resource allocation system

It is a strong impression of the Panel that education in general, and especially any development of education, is seriously hampered by a widespread attitude of “we do not have resources”. A part of this problem reflects the current lack of knowledge on teaching and learning necessary to implement novel methods in cost-effective ways. But a worse, underlying problem is the complete lack of transparency in the allocation of resources for teaching, which is currently done within each department. The teacher responsible for a course has no means of knowing what resources should be available, nor which costs are incurred. Many costs are only aggregated on the department level. (This is the case with the arrangement of written examinations, so a teacher who wants to use alternative modes of assessment will hear that “we do not have the resources” while in fact there are considerable resources which could be re-tasked.) Also, programme management needs to be a function for which there is some allocation of funding. The Panel was much surprised to hear that programme managers had no resources allocated to them even for covering their own time. This is not aligned to the education principles in the Aalto strategy, one of which concerns educational leadership.

Further, the Panel noticed a proliferation of courses at the School of Electrical Engineering; in fact, some four hundred different courses were offered, diluting the resources by spreading them out too thinly. This is clearly not driven by the needs of the programmes, but by other forces, and the Panel therefore recommends that more resources are controlled from the programme level. A transparent system where resources are explicitly allocated to the programme and to its prioritized courses will help empower educational leaders and teachers, and encourage their independence and thus responsibility for quality. It will also make it more natural to create and run programmes across organizational boundaries, in line with the Aalto mission. The Panel has heard concerns that an allocation model on the course level must surely take every possible instance into account and necessarily become overly bureaucratic, but the Panel believes that this is an unfounded worry. Such systems exist in universities all over the world, and while they are never perfect, they are always much better than no system, when it comes to allocating responsibility and control.

3. Systematic approaches to curriculum and course development

The Panel suggests establishing a pedagogical programme at the university level. This should encompass guidelines for programme and course design, including assessment and feedback procedures. The Panel noted an emerging awareness of modern outcomes-based curriculum development approaches, where learning outcomes on the programme level are reflected in the learning outcomes on the course level. Such systematic approaches for managing the programme-course relationship should be introduced on a university-wide level.

Regarding the learning outcomes of engineering programmes, it is the impression of the Panel that professional skills are currently often perceived as “soft skills” and placed as optional in the programmes, thus taking secondary positions compared to the subject content matter. But relevant personal and professional skills are both necessary and legitimate learning outcomes for an engineering degree, and they should therefore be included in every curriculum. Because engineering graduates must be able to apply their understanding and problem-solving skills in professional contexts, skills such as communication and teamwork are necessary.

On the course level, in turn, the intended learning outcomes should guide the course design, so that the teaching and learning activities support students in reaching those learning outcomes, and assessment procedures ensure that they are reached. This course design principle, constructive alignment, is quickly emerging at Aalto especially through the pedagogical education of faculty. Again, the personal and professional skills should be addressed on a course level, integrated with the technical knowledge and understanding, in a mutually supporting way. Applying pedagogical know-how makes it fully possible to integrate skills development in cost-effective ways. While the transition phase is resource-demanding; steady-state can be cost-neutral.

One concern

The Panel noticed with some concern a widespread sense of helplessness because many important problems were only framed in ways that made “someone else” responsible for them. There were especially three ubiquitous ideas where the Panel makes other interpretations which make it possible to do something about them:

- “The students are not motivated” - to a large extent we think the problem lies in poor course design.
- “The teachers are not motivated” - to a large extent we think the problem lies in poor incentive structures and lack of empowering structures.
- “We don’t have the resources” - to a large extent we think that the problem lies in the non-transparent resource allocation.

The recommendations above map to these problems and are intended to provide constructive ways forward.

Remarks on administrative systems

The Panel observed a widespread irritation with some of the administrative structures, for instance the use of WebOodi as a student feedback tool and the present rigid implementation of the module structure. It is counterproductive to enforce administrative systems onto the faculty if they are perceived as poorly functioning, and the Panel suggests a more flexible approach to module size.

One excellent practice on the School level

The Panel is very impressed with the Quality of Education Committee OpLaa, which has a wide representation within the School and has clearly been a key arena for dialogue around education. It is a unique feature of the School of Electrical Engineering and has survived several reorganizations. Among the many achievements of OpLaa are initiation of educational development, evaluation of applicants for teaching positions and arranging events for faculty. The Panel was delighted to constantly discover traces of its long-term influence, and considers the strategic work of OpLaa an important factor behind many of the strengths of education in this School. The panel recommends creating structures for these functions in other Schools as well.

Part D. Observations on the evaluation process and recommendations for improvement

It has been a privilege to be invited and allowed to share this exciting moment in Aalto history with you. We are deeply grateful at this opportunity to learn. Please allow us to come back and see in three years how the development has proceeded.

The practical organization has been exemplary and we would like to thank all the organisers, including our excellent student guide, Jere Pääkkönen, and our local School co-ordinator Kirsti Keltikangas, who provided all support and made the site visit run smoothly.

Would we do the same site visit again we feel that some adjustments of time allocation to meet the various groups could be made; we would, above all, have liked to increase the time we could spend with the students. From each programme we could have met students for an hour or two, and time would still fly like a brief moment. Further, the Teaching Evaluation Exercise self-evaluation model could also include a strategy for teaching and learning, and the relation to the strategy for research should be discussed.

Appendix A5

The School of Engineering

Architecture

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

After the shock of the reordering of the last year the Department of Architecture continues in the uncertainty of whether to form a new entity with Art and Design (AAD). The Panel wishes all parties involved a clear and speedy settlement of the issue.

The Panel found from both the self-evaluation and interviews a number of commendable areas together with some questions about other tried educational formats.

The Panel wishes to challenge the accepted wisdom with regard to student flow. Whilst acknowledging the benefits of interweaving a kind of apprentice system with an academic year structure, we feel the benefits are outweighed by some long term and some short term disadvantages.

The real test of quality will be the buildings that evolve at a period between ten and twenty years after the projects of the School Design Laboratory. The progress of the cohort is of great importance as well as that of the individual. Establishing a clearer and more equitable credit system, tightening the scope of the BA, forging a culture where informal dropping-out is the exception rather than the rule, and encouraging a longer pause between BA and MA courses if desired, will offer the student greater clarity of purpose, fiscal planning, and a five-year perspective within the twenty-year road plan that would be normal for an architect. Perhaps the greatest unseen benefit of this strategy would be the clearing of an enormous administrative burden that the system currently carries, freeing precious time for forward planning.

The strengths of the programme begin with its hallowed setting and the long and distinguished continuities of creativity aligned to the spirit of the Finnish context as outlined in the report's opening chapter. Guided by SIPs (strong individual professorships), students receive clear direction and, where appropriate, are introduced to the important team aspects of architecture.

There is a very strong tradition of design exercises drawn from real contexts to simulate real design work using systematic problem-based learning which probably needs to be balanced with more speculative and theoretically based work.

The Panel was impressed by the number of professorships for a department of its scale with arguably an ideal balance between 'arts' and 'science' chairs. The Department also has a relatively capacity to support part-time studio teachers. Their more formal integration into the teaching hierarchy needs to be addressed and, in particular, their valid and important voice in the student feedback system needs to be heard.

The Panel was impressed the Department's capacity to attract the 'best in the field' nationally to teach at all levels, from professors to studio assistants. This is perhaps the greatest overall strength.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

There are some contradictions between the perceived strength of professorial positions and the forum that draws these varied positions into a manageable form during a period of administrative transition (1.d and 1.e).

During the last decade, 1999-2010, the benefits of research-led design that is notable in the fields of urban planning and innovative construction have invigorated the teaching of the Department. There is a clear need for better coordination between subject areas. The Panel felt that there was unnecessary confusion and that a much better definition of goals for students at each stage should be established (4., 5., 6.).

The potential for flexibility of study and mobility is enormous and the Department has begun to harness this (7.).

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

A rather high-handed approach to the potential of inter-departmental teaching prevails. This is regrettable, particularly as some notable successes were observed, for instance the engineering laboratory's testing of timber structure. Connection to the social sciences also seems an obvious linkage.

Generally, student guidance and support for learning is good but a degree of inefficiency is accepted as the norm. Teaching methods achieve 'excellent' in some areas. In the Panel's view a perceived lack of teacher resources was not reflected in the staff-student ratio.

c. Degree programme evaluation and development (questions 17-22)

Clearly the feedback system needs to be refined. All parties seem to be frustrated either with the methods used or the lack of response. Better co-operation could be achieved at a broader level by clearer direction. If pedagogical training, YOOP, is to be successful, the trainers/training methods need to be aware of the idiosyncrasies of the subject area. The Department's summary is a good self-critical appraisal.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- 1(d) professional excellence in particular fields.
- 4(d) the wooden town studio.
- 7(d) support of mobility.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- 12(d) learning by doing/urban space.
- 15(d) excellent workshops.

c. In degree programme evaluation and development (questions 17-22)

- 22 self-critical analysis.

4. Recommendations for improvement

The image of Finnish architecture is of the highest order; great design with an economy of means characterizes a long period of creativity with an interpretive continuity that stimulates the aura of self-confidence. The setting and buildings of the Aalto-designed campus are a master class in themselves and the Department can claim to be housed in the very best facility for architectural education. At the same time this a period of considerable change and the Panel felt that, following the evaluation process, the moment should be grasped to put in place a number of strategic reviews.

Review of the decision making structure and lines of responsibility:

The predicament has been admirably summed up under the self-evaluation answer 8, para. 1. It opens with the following sentence “The main challenge in directing the degree programme is the lack of co-ordination or lack of a responsible body.” This is followed by a scathing analysis that suggests a need for a clearer hierarchy and determined paths for delegation. It may be useful to distil the outcome into an organizational chart, not least for the student body.

Reduce the silos and increase the level of critical debate:

As mentioned above, there is good reason for the Department’s clear self-confidence. However, there is a whiff of complacency. Where is the evidence for the healthy conflict of views that characterize memorable creative periods in a School’s history? It may be necessary to reinvigorate a theoretical position by creating a senior post in Theory and to draw together the artificial divide between it and History; this would have the advantage of drawing in other positions (and places). The designation of Chairs by building type seems particularly artificial ring-fencing, curiously out of tune with contemporary urban realities. In a review at appropriate stages it might be helpful to consider a more thematic approach within which Chairs or groups could stake out different approaches to common ground. It is most important to respect the potency of peer learning, which is better harnessed with fewer barriers.

Energy and HVAC-Technology

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The self-evaluation report shows the existence of several good ideas for improving the teaching within the programme, with a rather high generality for (at least) the whole School of Engineering. Most suggestions, however, include the comment that the resources are too limited, and in many cases obscure the good ideas. Indeed, the scarcity of resources is not verified and can not be judged (since there are no concrete plans presented) but, if the statement is true, then means to correct the situation must be sought so that several good ideas can be put into practice. A more concrete elaboration of the visionary ideas is also clearly needed!

The strength of the programme is a wide spectrum of competence in (primarily) the engineering aspects of energy. Although the curriculum list is given in Finnish, the course offerings are extensive.

The self-evaluation report pointed to one important activity, which was further elaborated in the interviews, namely a thorough revision of the programme contents through a core competence analysis based on an intelligently developed tool, which can even be extended to identify possible overlaps and the potential for collaborations with third parties (like other departments, programmes (e.g. Env Tech (Lahti), Architecture/ Building construction, Physics). The knowledge areas relevant to the field, their backgrounds and applications were mapped on current courses, and were planned to be projected into a set of professional profiles. This methodology, which can lead to focusing on the most important contents and, on the other hand, provide guidance for the students in the programme, is a very interesting effort which deserves special mention, particularly as it was initiated from within the programme without the need for extra resources! We can assume that this effort in the direction of a deeper analysis of the programme than just a course list will lead to several useful results.

This programme has the organizational advantage of being congruent to one department, which simplifies internal discussions. The programme, however, seemed, to some extent, to have been given its own responsibilities and development; this is considered as positive.

The self-evaluation report, strongly supported by interviews, indicates that the programme has enthusiastic and motivated teachers, and well-motivated students. Teaching material in Finnish that is most renowned for its quality is produced, and some alternative teaching methods are used. From the interview, rather than from the report, it can be seen that efforts exist to include a more holistic view of energy systems, by also including non-technical aspects, but this direction can be further pursued, (as noted) for example, by increased possibilities to include courses/modules from other schools or programmes. (The mechanisms for this, however, seem somewhat complicated and

unable to be easily used on a larger scale.)

The basic studies on the Bachelor's level are here, as in most of the engineering degree programmes, noted as an obstacle to further programme development. The idea promoted in the interview was, for example, an 'on time' mathematics education, still given by the mathematics department, but interleaved with the engineering courses. Such a development must be considered as positive, but needs forceful efforts to get started.

The programme has a rather well established system for student tutoring. As in other programmes, student advice is given on request, but little that is proactive is used.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The ambitious mapping of core competences on courses, aiming at professional profiles, is an excellent effort, with many positive outcomes that were expected. The suggestions for the development of the basic knowledge education are good, although the initiatives are not too developed. The internal study committee's establishment and activity are emergent advantages. Systematic internationalization and international programme co-operation are emerging.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The tutoring and follow-up systems show emerging ideas, but need to be fully implemented and verified. Using upper-level students as assistants to younger students, both as a resource and as a pedagogical means (for both!) is an emerging advantage. Alternative teaching and examination ideas seem like good ideas, but are not extensively documented; the incentives for increasing learning speed and throw-flow are, however, limited.

c. Degree programme evaluation and development (questions 17-22)

The programme shows a good effort, when one notes the need for a top-down view on the programme, where the result from the programme is considerably more than the sum of a set of courses. Limited work has yet been started, but the identification of core competences and courses is an excellent first step. This is believed to be necessary for a substantial reduction in the number of courses, which will thereby allow teaching to be improved. It will also define a course basis for a more holistic view of energy, and also further aspects of entrepreneurship and innovation techniques; this is a good step. The expressed demand for pedagogical education for all teachers is an emerging strategy.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The ambitious mapping of core competences on courses identifies and gives a clear description of how programme objectives, both subject-connected and more general, can be reached.

The degree programme has noticed the need for a leadership for the programme, and an internal 'study committee'. However, clearer authority for these needs to be developed.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

No remarkable practices were noted, except a positive basic feeling from the programme towards students and teaching.

c. In degree programme evaluation and development (questions 17-22)

The ambitious mapping of core competences on courses that aims at professional profiles is also, from this viewpoint, an excellent effort, which will certainly also point to several desired connections outside its own domain.

4. Recommendations for improvement

The work with identifying core competences and their relations in the programme should be continued and accelerated, with a set deadline defined (<1year). This goes hand in hand with the need for a top-down perspective on the programme education, which is very well described in the answer to question 22. This is fundamental for the further development of this programme - and all other engineering, or even Aalto, programmes. The heads of the degree programme and the local study groups must take responsibility for this action.

The self-evaluation report discusses some ideas for an improved monitoring of student success. Such efforts must continue, but must not be limited to 'on-demand' reactive support for students! Mechanisms must exist to track the progress of every individual, and to contact students who do not follow the 60 ECTS/year schedule. Dropping-out and slow progress are not acceptable for the individuals concerned and must also be very detrimental to the teaching in general, as students on a course will be much too diverse in their backgrounds. This is of crucial importance, especially in regard to internationalization. This must be emphasized, by everyone involved, to the programme and to the University in general.

The curriculum for the programme shows a large number of courses, all of them seemingly dealing with the engineering aspects of energy systems. The number of courses could, to some extent, be explained by the positive aim that they are to be attainable from different Bachelor's degrees. It is believed that the course offerings should be reduced and condensed, for the benefit of improved progress in teaching and education (and also for clarification of the interface with other parties). On the other hand, the engineering aspects need be complemented by several aspects of, for example, societal and environmental aspects of energy, founding a more holistic view of the energy system as a whole. The energy programme also seems to be a very suitable place for a further emphasis on innovation and entrepreneurship.

Student feedback on courses and teaching must be even more systematic and efficient. We suggest seeing this feedback as two separate stages. The first stage could collect mandatory feedback from all students after a course. This feedback would concern the general health of the course: 'Was this a relevant step forward?', 'Did the

course function in a practical way?’ and, say, three more questions, as a help to future student generations, and for management information. At the second stage, much more detailed information should only be collected when needed, in connection with revisions that are planned or demanded. Efficient tools for such evaluations, and quick access to the results for everyone concerned, must be demanded by the programme leader from the School or the University.

Discussion of the workload seems to be a hot topic for this programme too. It seems to focus on the relative numbers of credits between courses. This discussion does, however, seem to be an artifact, to a large extent, as the total programme demands are set. A general increase in credits for all courses would, in effect, mean that the demands on competence for the degree are lowered. The panel’s impression is that demands on student activity are rather lower than higher than at other comparable educational institutions.

Demand for some level of pedagogical education should not be just recommended but demanded from all teachers. Work with internationalizing the programme and with other international co-operation should continue.

Geomatics

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

Overall observations:

Geomatics is a rapidly changing discipline that has its roots in surveying, as a measurement science. It focuses on gathering, interpreting, managing and distributing spatial data, and serving the engineering sciences and practice with precise location data and society with spatial information. Geomatics incorporates a range of disciplines, including geodesy, surveying, photogrammetry, remote sensing, cartography, and geospatial information systems.

The Geomatics degree programme of Aalto University was founded and hosted by the Department of Surveying. Prof. Virrantaus was recently nominated as the Head of the degree programme, but three professors are responsible for their own subjects: Martin Vermeer (Geodesy), Henrik Haggrén (Photogrammetry and Remote Sensing) and Kirsi Virrantaus (Geoinformatics and Cartography). The founders are well respected by the members of the international communities (FIG, IAG, ISPRS, ICA). The geomatics study programme attracts some 35-40 students annually.

Strengths:

Staff: Haggren: Teacher of the Year 1991, Helsinki University of Technology (annually given to one professor at HUT); Virrantaus: Pioneer of Continuing Education Award, given November 21, 2001, for developing and managing lifelong learning courses on Geoinformatics between 1986-2001; Vermeer: National Land Survey Golden Badge of Honour for serving the surveying profession (undoubtedly including his teaching); many publications on learning and teaching development.

Well-based curriculum design: the goals were defined along scientific, pedagogical and social interactions. In order to outline the structure of our curriculum an analysis has been made based on the Bloom's Taxonomy. The competences required of a geomatics graduate are clearly defined. Progress is evaluated according to the gradual criteria of the competence portfolio. Most of the staff completed pedagogical studies for university teachers (20 credits or more studies in pedagogics). The staff are active in national and international co-operation in teaching and learning.

Geomatics is changing rapidly, owing to several new technologies, global positioning systems, mobile systems, ubiquitous real-time positioning outdoors and indoors, and location-based services; new sensor systems will make real-time mapping a reality. In the light of the above (staff and scientific potentials), the number of students could increase. As most of the courses are available in English, they annually attract approx. 20 foreign students from all over the world. As a positive action we recognized that a Marketing Team was established at the Department of Surveying. The response to the

evaluation questions was very good and informative. During the interview one could feel the enthusiasm for the subject.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- The implementation of the Bologna Agreement created a need to adjust the contents and structure of the courses. Some courses got a "spiral" structure in which early courses give an overview on subjects that are taught in more detail later. The curriculum design is well-founded: the goals were defined along scientific, pedagogical and social interactions. In order to outline the structure of the curriculum an excellent analysis was made based on the Bloom's Taxonomy. The core competences required are clearly defined and reflected in the learning outcomes.
- A number of modern teaching methods were implemented, and are used to make the learning experience more research-like and bring students into good contact with ongoing research.
- The learning progress is evaluated according to the gradual criteria of the competence portfolio.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- Guidance and counselling is available via email and home pages, visiting and calling. The doors of the staff are usually open all day long, inviting students to drop by and ask, which benefits a small number of students. Very good methods for learning support and feedback were developed in co-operation with the students' association. In learning diaries, students write about their significant learning experiences, events of the day, open questions, or evaluation of their own activity. "Open book" examinations and Internet examinations have been tried.
- As is mentioned in the self-evaluation, there are too many small courses. This situation results in the problems of limited time resources and staff shortage. The simplification of the course structure is recommended by combining them into larger courses.
- The limited administrative staff resources lead to poor support of teaching.

c. Degree programme evaluation and development (questions 17-22)

- The study programme is evaluated and updated every spring. During this process the consistency and relevancy of the courses are checked, based on the excellent pedagogical background. The most important source for this is the student's personal study plans. It would be good if the Aalto level ICT tools were improved in usability. (p.21)
- The smallness of the Department and the degree programme means that informal methods of student feedback have a chance of working well if the staff is so disposed (*).
- Its pedagogical competence is one of the most important strengths of the degree programme. The interest in raising pedagogical proficiency is supported by the services offered by Aalto Teaching Support.

**Note: It is interesting that this very positive impression is not reflected in the student feedback forms that were made available to the evaluators.*

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- A multidisciplinary team (of surveyors, cartographers, people involved in mathematics, sciences and other fields, and computer sciences) is working on the analysis of future needs
- GIS is integrating, and building bridges to other Departments and other Schools using spatial information processing.
- Students are fully employed after graduation.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- Most of the staff completed pedagogical studies for university teachers.
- Research/project-based teaching/learning is part of the focus of the programme.
- IT infrastructure, GIS, and mobile systems are integrated into the learning process.

c. In degree programme evaluation and development (questions 17-22)

- The evaluation is mainly based on informal communications, and/or commented upon as peer-review by fellow students in the digital learning environment (p. 28).
- Members of the staff have leading positions on the educational committees of international associations.

4. Recommendations for improvement

- The Aalto University bureaucracy needs a long decision-making process. Many important decisions are pending for a long time.
- The Surveying Department as a whole is threatened with closure (p. 18), in spite of its successful programme.
- A recognised risk factor has been the continual changes coming down from the Aalto University level, creating a lack of predictability (p.23). An example of the lack of predictability is the problem of planning teaching resources: The Head of the Degree Programme has to apply for funding for external staff for every year, within the Aalto system (p. 29), which generates difficulties within the implementation of individual courses.
- More visibility by the Aalto leaders would help the programme and its proactive staff to increase its success.
- The Head of the Degree Programme should investigate why the student feedback forms did not reflect the general feeling that the staff has excellent student satisfaction.

Landscape Architecture

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The only university-level degree programme of Landscape Architecture in Finland, with graduates much in demand and a subject field of particular and immediate social significance. Its close connection to the degree programme of Architecture, with a common first year (90%), means that landscape students have well-developed spatial dexterity as a foundation.

The long-standing tradition in Finland of a close dialogue between buildings and their landscape setting self-promotes the vital importance of the subject.

The Panel felt, as with a number of other programmes at Aalto University, that there was a tendency to blame the 'lack of resources' for issues that are more of a managerial nature and need self-determination. In the case of Landscape Architecture, there seems to be acceptance of a fiscal feeding chain that within a broader strategy needs to be challenged.

Student support, whilst benefiting from small numbers and the informal atmosphere of the Department, is exemplary. The introductory field study course with the attendance of student support staff seems a good precedent.

The small number of the teaching staff numbers (which could also be claustrophobic) has developed a cohesive and mutually supportive team.

There is no sense of insecurity amongst students with regard to employment. A high proportion seek a period of international experience, and almost without exception return to be absorbed by the demand for their skills in a widening range of consultancies and other employment groups. The challenge is for the Department to be able to meet the need for the consequential widening of their intellectual framework. One of the core strengths of the Department, its intimacy, will itself be challenged and the panel's view is that this is timely.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

Consistently poor self-evaluation scores Q numbers 1; 2; 3; 5. Score 2 (emerging) seems unreasonably pessimistic and reactive and needs to be challenged.

It seems that the process has provided an overdue stimulus to some much needed critical debate about long held assumptions. The result is that the Panel is responding to the start of a process rather than to an evolved position.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

10 Student guidance is excellent.

12 Success in the use of problem-based learning as a teaching method.

13 Methods for evaluating learning: the Panel was surprised to find self-evaluation so low.

15 Whilst change will be required, the Panel felt this was an over-pessimistic view of conditions.

c. Degree programme evaluation and development (questions 17-22)

17 Very good internal feedback, but there is a need to help to positively modify the WebOodi feedback system.

18 Good co-operation but there is a need to maintain this in an enlarged programme.

17 – 22 A consistent lack of self-determination and a consequent culture of blame.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

Landscape Architecture is an ideal programme at both BA and MA levels for linking the learning outcomes of courses and modules (for a, b, c), both between the Aalto Schools and programmes, and other Finnish and regional centres and international programmes. The Aalto Landscape Architecture programme is a model of support for the competence development and professional development of students and one that could well be emulated by other university schools and programmes.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Field courses excellently act as mediators between the theoretical and practical sides of the discipline and are a very good introduction to the following year's course subjects.

c. In degree programme evaluation and development (questions 17-22)

The way in which student feedback is collected, monitored and acted on is an excellent precedent. This extends to feedback from former students, employers and other stakeholders. There is clearly very good cooperation amongst staff, although clearer definition of roles is required.

4. Recommendations for improvement

The Panel believes there is huge untapped potential in this programme, which is currently viewed with some pride as a “minority of minorities”; however, there was little evidence of an appetite to grasp or press for its development. In the short term the Panel thinks it would be important to establish a review to encourage the formulation of a clear strategy. The Panel was surprised that no plan was offered for expansion. This suggested complacency about the success of the status quo and a reluctance to embrace change. From the evidence of the evaluation report, the interviews and discussions, there are a number of actions needed.

There is an urgent need for time to be allotted for the Professors to strategize and to take the lead in formulating a framework for the future. A professorial role should include the need to promote the programme to the University, and also to a national, Baltic and international audience.

A plan is needed to establish the potential areas of interdisciplinary collaboration, which seem to be numerous and where the landscape design voice is needed and badly missed.

The need to positively view growth, which as a result of demand feels almost inevitable, and to allow expansion under controlled circumstances. This needs a review of the physical setting of the Department, which is at present constrained by its discrete terminal position within a listed building.

There is a need to develop a more public and recognizable identity, rather than a subset of architecture, perhaps through publication, exhibitions and other media, and through the established network of international links with other landscape courses for students.

There is a need for the University to plan for the expansion of the Landscape Architecture programme in phased steps to meet demand and the unrequited potential.

The Panel recommends that a clearer and fuller statement of the goals of the Master's degree programme is established. As part of this process the Panel also strongly recommends that the current ambiguities created by the student 'drift' of an average of 7–8 years to complete the 300 ECTS of the two programmes needs to be rectified in order that 'drift' is an exception rather than the rule.

The Panel felt that there was a rather limited range of theoretical positions in contemporary landscape architecture design offered by the programme, whilst acknowledging the strong tradition of practice-led design tutoring and evaluation, and endorsing the close collaboration with the International Federation of Landscape Architecture (IFLA) and other European Schools of Landscape Architecture.

Most broadly, this small programme must shoulder its share of responsibility for many new issues confronting society that will involve the development of new or revised attitudes to our common ground. There are good precedents in Europe like the German example of the reclamation of the Ruhr Valley industrial belt. The Panel believes that there is a need for a more ambitious vision of the future rather than the tendency to complacency, which is evident in the self-evaluation report, where progress is hampered by the problems of the day to day and the too often repeated cry of a lack of resources.

Mechanical Engineering

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

Strengths:

The creation of A1 is seen as a good thing. The Department already has good co-operation with the Department of Economy and the Department of Art.

The Department puts a lot of effort into welcoming students. An international Master's programme in maritime engineering in ice conditions is starting. The programme is very much involved in the Design Factory and one of the professors is in a leading position there. The teachers and the programme have strong co-operation with industry, which funds Master's theses and supplies guest lecturers. They are proud of offering a wide spectrum of courses and have international contacts.

Ambitions, roadmap to 2020:

Their ambition is the creation of a digital design workshop and the implementation of associated modern teaching methods. In the future the emphasis should be on production and rapid prototyping with a strong link to mechatronics. What they feel is lacking is a message from the administration (in words) that this is the right way and the target can be fixed and appropriately funded. There is more feedback needed from the University administration.

Student interviews emphasize that the teachers of the programme are easily accessible, and study guidance is available. The tutoring and advice activities are, however, focused on 'on request' actions, with rather limited 'proactive' efforts. The Panel is concerned with long study times, although the industry and system do not seem to recognize this as a major problem.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- There are two departments (of Engineering Design and Production, and Applied Mechanics) involved in the programme, and this causes difficulties with the coordination of courses. There is a moderately good distribution of courses, with substantial overlap, and specialization that is much too evolved.
- There is no committee established for planning the programme. Professors meet to discuss the programme. Studies are divided into modules, which makes planning more difficult, for both students and teachers. The resources allocated are poorly linked with the degree programme. Procedures for updating the programme are moderately good, with low intensity internal and external processes. Student flexibility is stated as being too high, leading to moderately good teaching efficiency.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- They could be better in PhD education. Student–teacher ratios are moderately good, but some revisions are emerging. However, there are too many courses (approx. 200 for an annual group size of 120) and some courses have a low number of students, which is a bad situation, indicating weak internal prioritization processes. The study times are too long (seven instead of five years), mainly because students are working part time to finance their studies. There is a reluctance to take out loans. The result is bad for education.

c. Degree programme evaluation and development (questions 17-22)

- The acceptance of students and graduates in industry is good. It is noted that communication between the person responsible for the programme and the two departments is weak, giving a poor basis for development. The programme identity is thereby poor, in any aspect beyond the contents of the individual courses. The utilization of student feedback systems seems to be moderately good.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

None particular were noted.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Reception of the students at the beginning, where students are allocated a “student mentor”.

Field specific project work is an asset for the students.

c. In degree programme evaluation and development (questions 17-22)

Teachers are stated by students to be easily accessible.

4. Recommendations for improvement

1. Implement a committee that oversees the planning of the degree programme.
2. Analyze the course contents with the aim of reducing the number of courses and removing overlaps.
3. Appoint a professor (or dean of studies) who is in charge of the programme and programme development.
4. The University administration should make the funding procedures more transparent so that the funding for the degree programme is clear.
5. The University administration should give feedback on the roadmap 2020 and approve targets and associated funding.
6. Develop or implement systems for feedback from students concerning the courses passed.

7. Develop more efficient methods for proactive student counselling, in order to increase student activity.
8. Continue development of alternative teaching and examination methods.

Master's Programme in Environmental Technology (Lahti)

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The history of the degree programme in Environmental Technology at the Lahti Centre differs quite substantially from other programme developments in Aalto University, since it was created only in 2006. It was not linked to any department so there was the chance to tackle the conception of the programme without any ballast from a purely content-oriented and education-oriented perspective. To counter the interdisciplinary challenges in the field, a holistic and system approach for programming the studies was chosen. This model integrates a multitude of competences and skills from systemic knowledge to engineering and management tasks. A particular strength of the programme is that methodological tools are also provided within the regular curriculum.

The Lahti centre was used for the start-up phase to provide the best environment possible, since it allowed for the establishment of innovative study programme ideas. The disadvantage of the distance to the central locations of Aalto University (some 50% of the students and almost all of the research/teaching staff commute from Helsinki) put strong constraints on the development of the weekly schedule (lecturing only on Thursdays to Saturdays) and resulted in a regulated, well organized and outstandingly concentrated curriculum and working atmosphere (which is an advantage of remote learning/research centres). In addition, this “part-time” study model also seems to be attractive to groups of people who are not normally interested in additional university studies. In this light, the long duration of studies has to be re-evaluated, since all compulsory subjects are normally taken within the minimum time of two years. Additional and elective courses can then be completed during the following period, or (if not taken as a part-time model) parallel to the obligatory programme. However, individual programme choices, like special elective courses or (if they have not been previously taken) the mandatory courses from the basic degree programme, might substantially prolong the duration of studies. Owing to the biennial curriculum, this problem has to be rated as “critical”. The programme planning group thus developed the idea of condensing the basic programme requirements (28 cr. in math, physics and chemistry) in a pre-studies block. This idea has not been developed in detail, but should be considered as a valid option for improving the flow of studies.

The Panel shares the view that this “part-time” studies model is one option in academic education and lifelong learning. However, a more detailed assessment should be made, as to whether its future lies in a regular MSc programme or a postgraduate MAS programme (Master of Advanced Sciences), a model for which can be found in numerous references (in the field) in an international context.

From the report it is not too clear how teaching is linked to research activities or what kind of projects/learning formats could provide this connection. Here, the Panel is missing some valuable information about research activities, which is a pity, since other universities (TU Tampere, the Lahti University of Applied Sciences, and others) also have offshoot activities in Lahti, which in the future might form a veritable knowledge cluster on environmental technologies in the region. Aalto University should take the lead, and from the teaching/educational point of view it has the capacities to do so. This would also anchor the centre much better in the regional environment, which, without additional incentives, might become an issue in the future, as is very often observed in other contexts, where after a certain ambition and the enthusiasm of the pioneering phase the activities tend to decelerate.

In addition to the regional networks integration, the international perspective is of importance, since environmental technology can be regarded as potentially export-oriented.

The activities of the centre to develop a new Master's programme within the Nordic Five Tech Alliance in the field of Environmental technologies (working title: Enviro Five Tech) underpins this understanding in the Centre's ambitions. It is of the utmost importance for the Lahti Centre to create a very clear profile within this group of five. In compliance with this strategy a substantial part (perhaps in the future, all) of the courses will be offered in English. This will ease international students' intake and exchange. In how far these studies will be completely attractive to domestic students cannot be predicted. However, the organizers are optimistic, since the number of applicants in the last year was extremely high, so that only approx. the top fifth of the students could be accepted. It is worth mentioning that this idea of excellence within a small group set-up which allows good students to have guidance, intensive academic debate and easy handling of a variety of learning formats is one of the main ingredients of success.

To strengthen this idea and allow integration into 2012 curriculum planning, the programme steering group has taken the initiative (presented in the panel interviews) not only to link academic content to the schedules of studies, but also to shape course structure in detail from the perspectives of the variation of learning formats and soft skills to be facilitated within the studies. A systemic assessment tool for the whole of the programme was developed for internal benchmarking and evolution of the pedagogic concepts for the upcoming track in 2012.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The programme's curriculum is very consistent, and reflects pressing issues in environmental technology in national and international contexts very well. However, the studies provide a good overview without specializing in one field (i.e. Environmental Engineering, Waste Technologies/Engineering, Water Technology/Engineering, and Landscape Ecology). Indeed, Aalto University holds this competence available in other departments, so they can be chosen as minors. So the programme complements the knowledge gathered in the University almost perfectly. Indeed, for stronger co-operation as well as for the individual organization of studies the remote location in Lahti might be a problem. Perhaps the geographical distance is also one of the reasons for the only

emerging integration of research and teaching. The international initiatives and the internal benchmarking supported by instruments that were developed at the Centre especially for this purpose point to the fact that the programme steering group was aware of this problem.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

In general, the programme has been successfully implemented and runs smoothly. On closer inspection, the programme consists of three major building blocks of different quality and with different challenges: 1. Core studies: They are well composed and implemented in a very concentrated and regulated study scheme. The core studies are very flexible and subject to constant evolution and amendment. The 2012 programme will bring a new dimension of international ambitions and opportunities into the programme.

2. Minors/Elective courses: Depending on the students' individual curricula these might work smoothly or not, since exchange with other programmes at Aalto University is not too easy to arrange. However, this is of the utmost importance for this programme and should be subject to reform in the short term. Lahti's remote location is seen as a problem in regard to this issue. 3. Basic Degree Programme: Some new concepts are needed for handling this difficult, yet important issue. The proposal prepared by the programme steering group has to be elaborated.

c. Degree programme evaluation and development (questions 17-22)

Owing to the programme's small size the feedback is very personal and thus not very systematic. Its level today is satisfying in respect to the purpose. However, even the reporters do not see a systematic back-coupling of these feedbacks with the development of the programme (q17). The recent initiative for the 2012 programme can be seen as a first intent to overcome this problem. The same problems exist in the stakeholders' and industry feedback. For reasons of future monitoring and control it might be helpful to follow a more systematic approach for feedback and communication.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- This is a well composed and distilled core programme scheme in a regulated schedule which allows for time-efficient studies. The programme can be seen as exemplary "part-time" studies. Whether this is intended is questionable, but it opens the programme to new target groups. It also works as "full time" with the problem of the missing geographical proximity to the Helsinki and Otaniemi campuses.
- It takes a content/problem-oriented perspective.
- There is a new initiative on the internal benchmarking of the programme, and stronger binding educational formats and learning outcomes as well as soft skills for practice.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- There is a variety of teaching/learning formats implemented in a holistic approach to the field of expertise.
- Benchmarking initiative for 2012 course planning.
- Students have been successfully integrated into the everyday practice of education, tutoring and guidance within the programme (although until now there has been no systematic approach).

c. In degree programme evaluation and development (questions 17-22)

- There is an awareness of pedagogical competences.

4. Recommendations for improvement

Providing education and learning opportunities in Environmental Technologies is one of the main challenges for universities worldwide. In this field most of the engineering and technological knowledge “stored” within the universities is closely linked to global challenges. The stronger integration of this programme is thus very valuable for the University. However, the programme should have a stronger link between research and educational initiatives. The programme steering group seems to be aware of this, but apart from very obvious reasons (no direct link to departments with their research institutes, missing geographical proximity, and perhaps missing resources for research in Lahti) it is not clear (to the Panel) why the link is so weak at the moment. Immediate action should be taken from both sides, the Schools Board and the programme participants (teachers/researchers), to raise funds and to build networks to strengthen this integration. Otherwise, there will be a problem of renewal of content and expertise in the future, which will then lead to disadvantages in the international academic education market. Nevertheless, the panel supports strongly the initiatives to internationalize the programme together with the Nordic Five Tech network and, by this means, consolidate the position of this important programme within the Aalto University portfolio, since it provides valuable basic knowledge on sustainability issues that link technology, nature and society.

A strategic debate on the integration of this programme with others on different levels must be raised in the future. The key issues might be the following: integration of curricula (see above), integration of the individual educational careers of students, research and teaching networks within Aalto University and beyond (e.g. the Lahti cluster). The allocation of adequate resources and means for development might be a critical issue in this discussion.

Real Estate Economics

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

Preamble:

The well-prepared self-evaluation report provides a solid basis for the discussion of strengths and ambitions within the presented programme. In a self-critical manner it lists achievements, challenges and opportunities resulting from the Aalto University progress and set-up of the degree programme. Strategic goals and new projects were also presented and discussed within the interviews during the assessment week. In this programme the aim of the Panel should be to make a best practice programme even better!

In general, this programme follows a clear idea of how to link teaching structure, the means of teaching and learning outcome. Quality assessment is mainly directed by the “marketability” of graduates (a clear vocational concept). Indeed, the programme does not only target this goal on the content and course side, but informs the process positively by encouraging or supporting numerous activities like inner programme debate or a particular form of tutoring which provides other “soft” skills important for later professional life, like communication etc.

As mentioned, the programme is developed strongly from the perspective of the learning outcomes and has continuously been the subject of amendment and reform. The Bologna Reform of 2005 has been used to create an updated curriculum that is highly competitive with other references in Europe. It should be taken into account that the programme is a joint development of the School of Engineering and the Hanken School of Economics, which might have provoked a more content- and product-driven reform than in other cases where the existing structure of a department dominated the discussion of opportunities for change.

But even if the programme fits well into the requirements of two-cycle education, some challenges were identified in the report: a) The modules do not seem to be a helpful structure. Their arithmetic in credits causes problems with the integration of students either going abroad or arriving as guest students, especially in international exchange programmes. b) The collaboration with the Hanken School of Economics might not be a sustainable model, since the Schools’ policies divergence tends to grow to a critical level. Until now, it has been unclear as to how a substitute structure can function, since not only do the contents of courses have to be rearranged but funding, too. Unfortunately, the merging of the School of Economics into Aalto University does not offer too many options for optimization, since the requested expertise is not represented within this School. However, the Head of the Degree Programme (REIF) is optimistic, that owing to the success of the programme substantial industry funding might be arranged.

The field of Real Estate Economics is changing quickly, and the lean, small structure of the programme and its teaching body seems to be the adequate way of organizing the flexibility necessary and to be able to react swiftly to changing requirements. To make students aware of this problem, a substantial part of the teaching is arranged in problem-based learning formats. In two Master's programmes presented to the Panel, "Managing Spatial Change" and "Creative Sustainability", this learning format/concept should be further developed. These Master's programmes also aim on intensifying interdisciplinary and interdepartmental collaboration. Since the programme is too small to incorporate all the fields of expertise needed in such an endeavour, a model for integrating experts from other fields/other universities and even industries is under development. Beside the fact that research and teaching can be easily integrated by means of this model, the model remains very flexible and (on the base of a regular feedback and evaluation process, e.g. made by an external education/Scientific Advisory Board (as at the Lahti Centre) can be readjusted to changing requirements. The flexibility of the programme is an advantage but it also requires strong continuity in knowledge management and transfer in the programme planning and steering as well as in core competences to be provided by the Chairs representing the programme. The proposed debate on the possibilities of development and career options for scientific and teaching staff should be taken as an impulse to cope with this challenge, even if it is not yet clear whether a tenure model is the most preferable option. One piece of crucial information, extracted from the interviews, has to be taken into account in this debate: the established staff and contracting system obviously does not seem to be very suitable to attract and commit the most talented academics to the programme and the department.

A remarkable strength of the programme is the integration of students' activities as supportive means in reinforcing education, promoting learning concepts rather than teaching concepts. This is perhaps only easy to organise in smaller departments, but might be elaborated to be a suitable element to be integrated in other programmes too.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- The programme is subject to constant evaluation and revision. Planning and management tools seem to be developed in an adequate way. Owing to the problem-oriented teaching methodologies there is a necessity to combine research and teaching, which (structurally*) has been achieved in an exemplary manner.
- Two structural issues of critical importance have been raised in the report: The distribution of powers between the HoDP and the Department is unclear, yet it is risky for the management of the programme. In the last few years, this does not seem to be a problem, since the programme is running smoothly and is not too dependent on departmental support. However, this issue should be properly solved in the future.

**Since the panel does not have sufficient insight into research activities and results, it is hard to judge whether the content is also adequate.*

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The programme has been successfully implemented and runs smoothly. Some adjustments due to upcoming challenges (Hanken leaving the programme) might be needed in the future. The content/methods of the programme seem to be in a very productive, continuous cycle of renewal.

Attention should be focused on two issues: a) Integration of the basic degree programme, which is regarded as being very valuable, but not too well connected to the core curriculum of the degree programme. The newly agreed provision of math's courses from the Economy Department should be thoroughly surveyed and evaluated. b) The development of assessable feedback methods. Its level today is satisfying in respect to the purpose of the evaluation. For future monitoring and controlling reasons it might be helpful to follow a more systematic approach, while the WebOodi system does not seem to be the productive way to do it.

c. Degree programme evaluation and development (questions 17-22)

Response from industry implies that the programme is adequately tailored to market requirements. Real Estate Economics can be regarded as a discipline strongly linked to a "home-market", so this can be seen as a good indicator. There is no doubt that the programme planning group is aware of the fact that internationalization, especially in the running and newly planned Master's programmes, might be a new type of challenge in respect to this question and that these programmes are of a different nature.

In addition, see "b) Feedback" in 2b.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

See above! In particular:

(Structural*) connection of research and teaching in innovative learning formats.

Flexibility of programme.

Ability to combine the courses into a comprehensive entirety of a programme offering added value.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Variety of teaching/learning formats implemented.

Integrating students successfully into everyday practice of education, tutoring and guidance within the programme.

c. In degree programme evaluation and development (questions 17-22)

See above.

4. Recommendations for improvement

The programme is running smoothly. The programme steering group has clear ambitions and is initiative in developing strategies and solutions for its development. No immediate action apart from the ongoing activity is required on the part of the programme management.

However, the success of the programme is dependent on decisions to be made by the School of Engineering or Aalto University:

- Organizational scheme of powers
- (scientific/academic) Staff development
- Policy of integration of the BAC-studies.

With regard to the developing Master's programmes it seems to be helpful to make efforts to get a clearer picture of the requirements for being successful in a very competitive international market with a clear profile and internationally recognized certification standards.

In the perspective of the long term it might be useful to solidify the financial base of the programme. Support from industry, which might be acquired now because of the challenges in connection with Hanken's withdrawal from the programme, might be institutionally organized in foundations, and endowment chairs (as practised in other Schools of Economics). This would form a sustainable basis for future teaching activities, since the financial support (for the moment) seems to be based on very personalized contacts and networks. They should be transformed into institutionalized networks.

Master's programme in Real Estate Investment and Finance

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

Overall:

Surveyors are traditionally well educated in the basics of real estate legislation and markets. In today's world, requirements for knowledge in real estate are expanding fast. It is no longer possible to educate surveyors for all the traditional tasks in unified programmes; but the programmes have to have real options where students can really specialise in real estate economics. There is a high demand for professionals in the field of real estate investment and finance. The field of real estate offers an interesting and challenging area for the application of modern financial tools. Real estate investment and financial analysts and managers will be needed both in the field of financial services and in the real estate industry itself. In recognition of this need by Aalto University, the School of Engineering, the Department of Surveying (DS) and the Swedish School of Economics and Business Administration (Hanken) an MSc programme on Real Estate Investment and Finance (REIF) has been introduced. The current information is that Hanken will no longer participate in REIF after spring 2012 and will not take new students in 2011.

Strengths

Staff: The programme leaders are well recognized by the professional communities. The FIG's Commission on "Valuation and the Management of Real Estate" was led by Professor Kauko Viitanen (2007-10). The majority of teachers in the programme have participated in and completed studies in pedagogy (20 cr.) p.23.

Programme: The competences required are clearly defined. Progress is evaluated according to the gradual criteria of the competence portfolio. There are research-oriented courses. The programme follows the needs of the industry; there is a strong support from the stakeholders, and a very good employment rate. Well managed student support results in the fact that most of the students are able to complete their studies in almost five years.

Innovation: Two new MSc courses have been introduced by the team.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

- The programme is well founded, and contains good-quality, cross-disciplinary and multidisciplinary courses.

- There is a permanent advisory group (called TEKMA) at the Department, consisting of employers, non-profit organizations and other interest groups, and University representatives. The graduates are fully employed.
- The programme and related learning materials have been continuously further developed and there is an educational development project in the Department (2010-2011).
- A new partner university needs to be found, if Hanken no longer wishes to participate longer in REIF or replaced by external teachers in Finance (p.19).

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

- The programme has engaged leading professors from the U.S, the UK, Sweden and Finland, giving the course participants excellent international experiences. Each student gets a personal tutor who works at the Department. The guidance and counselling is available via personal contacts, homepages, e-mails, and calls. The staff members' doors are usually open all day long to the students just to come in and talk to the personnel.
- The feedback is a tool for raising, maintaining and steering students' motivation.
- Teaching methods are fitting to the course content, and include traditional lectures, small group exercises, case studies, discussions, learning diaries, seminars, game sessions, as well as one-to-one interactions like personal guidance or thesis supervision. On-line teaching/learning methods have also been used. One example of the excellent pedagogical solutions could be the "Game in urban planning and development" course (p.22).

c. Degree programme evaluation and development (questions 17-22)

- The courses are well supervised by the Head of the Degree Programme, and updated and further developed continuously, every year. Development is mainly based on the informal feedback channels. Information from the stakeholders flows two ways via meetings within professional associations, research projects and informal gatherings.
- There are weekly meetings for the research group (REG) about both teaching and research, where all everyday work issues are also covered. Co-operation between universities is managed mainly on the level of HoDP.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- Cross-disciplinary and multidisciplinary research project experiences are included in the programme planning.
- A structured approach is used to fulfill the needs of stakeholders in the international market.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- The programme invited excellent international experts.

- Broad real-life partnership was built with city and regional councils around Helsinki; the Ministry of the Environment also supported the courses.
- There were problem-based learning experiences (URBAX computer game in Urban Planning and Development).

c. In degree programme evaluation and development (questions 17-22)

- There was evaluation from the ALUMNI. (An advanced publication was presented by the Head of the Degree Programme.)
- During the TEE meetings, participants used open wiki-space and worked jointly between the meetings.

4. Recommendations for improvement

At the moment personal resources are manageable (p.24), but the programme is very dependent on individuals, as there are no possibilities of filling-in gaps, owing to this combination of a variety of sciences. The big challenge is to find out how to replace courses in Finance from Hanken after spring 2012. The Head of the Degree Programme is planning to contact the stakeholders and discuss this issue with potential partners and find a way to finance it. Support from the School of Engineering and Aalto University is essential.

Internal mobility within Aalto University is not functioning well. The students of the REIF programme cannot take courses suitable for their studies from other than technical Schools at Aalto, because on the one hand the suitable course lectures given by the Aalto School of Economics and the Aalto School of Art and Design are not listed as being available for REIF, and on the other hand they do not offer so many courses in English (p. 20).

The Aalto University bureaucracy needs a long decision making process. Many of the important decisions are pending. This situation results in vagueness in managing the programme.

HoDP's decision making power of is narrow; the situation should be managed at the Aalto or School of Engineering level.

The (20 credits) module system does not fit internationally.

Structural Engineering and Building Technology

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The self-evaluation report was very difficult to read and understand, mainly because some background information (organizational chart and course outlines) was missing. The comments here are mainly based on the interviews. Another observation is that not many people seemed to be involved in the preparation of the self-evaluation and that the planning officer associated with the programme seemed to be only marginally involved in drafting the document.

The development of the new Aalto University is perceived to have had a positive effect on the degree programme. There is now a good link between the different diverse groups and people are well motivated. They have good ties with industry and many Master's theses are sponsored by industry.

There is an interesting initiative (Software for Target-Oriented Personal Syllabus, STOPS) to develop a software tool for students, so the planning of a syllabus can be made transparent to the student and, in a way, controlled by him/her. STOPS is still under development and will be offered on the internet, possibly to be used even by high school students looking for ideas of what to study. The idea is to make a student understand that the multiplicity of courses is part of a clear roadmap to achieving the necessary skills at the end. The advantages are these: The student sees more clearly why he/she has to take certain courses, and what the prerequisites are. He/she has an understandable lecture plan without clashes between the different courses. He/she has more motivation because he/she can partially influence the course syllabus so that more time is devoted to his/her areas of interest. The student is made aware that the education leads somewhere. This tool, once fully developed and tested, could also be used by other Schools at A! No timetable for completion was stated, and the initiative seemed largely unknown by interviewees.

The strategy for the roadmap to 2020 is as follows: Since the Department cannot be best in all areas, two top areas will be strengthened: Building material technology (stone based) and Building Information Management (BIM). In the teaching methodology, there are plans to go to more problem-based learning. The idea is to create a "building factory" similar in concept to the Design Factory.

Summary:

The degree programme personnel see the creation of A! as an opportunity for change and have some ideas and a roadmap.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

There are some problems with the fact that the management (and resource allocation) responsibilities are not clearly defined. This is because the programme and the departments are not the same. This is an administrative issue and should be resolved at administration level. A clarification of roles would open up the programme to important complementary knowledge areas that are deemed important for the further development of civil and building engineering.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

There are some problems with some subjects in the Bachelor's programme, over which the programme/department has limited control. The courses in physics and mathematics are service lectures supplied by other departments and the contents do not always satisfy the needs of the programme. One solution to this would be to take more control of the contents of the service courses.

c. Degree programme evaluation and development (questions 17-22)

The degree programme suffers from too many courses, some of which have low ECTS and student numbers. This leads to difficult scheduling, and an excessive workload perceived by the students and, consequentially, study times that are too long (on average, about seven instead of five years).

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The introduction of STOPS for curriculum planning is seen as a good initiative and has the potential of great benefit for the future planning of curricula. However, one has to wait for it to be applied in practice.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The combination of lectures and laboratory classes, where all students are kept interested and busy with collecting information, is a very good practice. The involvement of students from Architecture in these laboratory sessions is also very beneficial, and this should be expanded.

c. In degree programme evaluation and development (questions 17-22)

Students together with some from Architecture compete in competitions and have been awarded prizes. This is a good practice and should be expanded.

4. Recommendations for improvement

1. Review the management and funding processes in the view of making them more transparent, so that the decision making procedure and the funding of the degree programme are clear.
2. Review the number and size of courses with the aim of optimizing student learning time. Use the STOPS programme to assist in this process.
3. Communicate the STOPS programme to other programmes, so it can be used there.
4. After a trial and quality acceptance tests, implement STOPS on the internet.
5. Produce a roadmap for 2020 outlining in more detail the aims for teaching practices and contents. Introduce more short-time strategies, in order to take advantage of the Aalto agenda of setting national examples.
6. The University administration to recognize and reward best practices.
7. Expand collaboration with Architecture in participating in competitions and in joint laboratory classes. Assign a coordinator for this task.

Transportation and Environmental Engineering

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The self-evaluation report is stated to be the result of an ambitiously planned effort among teachers and staff. Although this may be the case, the result is very difficult to read. This is partially due to the fact that the department and programme structures are both so complex that even the authors of the report seem to mix the concepts. In general, the report contains some interesting ideas concerning teaching and education. The ideas are, however, rarely backed up by facts concerning the present implementation, neither are they detailed enough to be implemented in the reasonably close future. The report, supported by the interviews, can be said to more or less completely lack both vision and strategies, which is assessed 'critical' by the Panel, since the range of expertise gathered in the field is crucial for being able to tackle pressing global challenges. Thus, immediate action has to be taken by the programme steering group to catch up with changing requirements in teaching. Even if some of the activities (at least in research) are on a competitive level and some of the courses reflect this, the overall picture is missing in the programming of the degree curriculum. The Aalto University integration process should be seen as a tremendous chance to condense and clarify the strength of the Department-wide scope of expertise AND leading research capabilities within a comprehensive concept for education and learning in the field.

However, the only way for the development of ongoing activities is stated to be through the addition of new academic staff to the Department and the start of new English Master's Programmes. This disregards the fact that the department and programme are responsible for aspects of many globally urgent large-scale challenges. When pressed in the interview, the interviewees mentioned that there exist new development directions, e.g., inter-regional transports, the disposal of nuclear waste, and global water resources, and areas where expertise already exists or can be created by new tenure positions. The timeframe mentioned is 2020, or 10 years hence. The programme states that it has motivated teachers and similarly motivated students (a fact which is also verified by student interviews). A strength is the multi-disciplinarity in the areas covered, an aspect which is stated to be counteracted by geographic distances between the various locations of the institutes on the Otaniemi campus.

A major obstacle for further development is also given as the basic education block, which is not suited for this degree programme. New planning of the degree programme itself also awaits the new Bachelor's-level education and programmes. The programme at present has a system of both teacher and student tutors, with the general ambition to support students. The system of tutoring is reported (in the interview) to be inefficient, and tutoring efforts are primarily responsive, but seem to be unsystematic and with

very little of proactivity; the follow-up of student progress is not as good as it could be.

The main strength of the programme is that it is positioned in a number of globally fundamental growth areas, where research and education efforts can be foreseen to grow rather quickly. For these, a multi-disciplinary approach is necessary, and stated as present. Activities in such fundamental areas, however, also demand visionary thinking, and receptivity for current international trends. The programme has good potential for improvement in these areas.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

As a consequence of the need to manage the abundance of content and expertise in the field of engagement of this programme, the process of integration into one degree is a formidable challenge, but it is imperative. Based on the report, very little has yet been done in the creation of a clear programme entity.

The programme view of the education also seems in general to be poor. The programme does not have an effective management, but this is mixed with departmental leadership. It is stated that this avoids conflicts, but it can be argued that teaching might be invisibly drained of resources in favour of the research. The TDG seems like an emerging initiative, but very few interesting results are given; the unclear relation between department and programme is also valid here.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The self-evaluation report reflects emerging efforts towards understanding learning and examination aspects, the key issue being the dependence of suitable methods on individuals and topics. Few concrete examples and results are discussed, but the ambitions are noteworthy. The relation of this degree programme to basic studies seems complicated, and needs considerable further efforts. The efforts from the programme to attack basic studies' deficiencies and develop its own contents and structures must be seen as poor.

c. Degree programme evaluation and development (questions 17-22)

The self-evaluation report expresses many problems in demanding pedagogical education for the staff, although a commitment to Aalto strategy has been given above. Some internal programmes (to be completed by 2012, q20) should enhance pedagogical competence. While this has to be regarded as a very useful initiative, other important means of quality management in education have to be revised on a more substantial level (e.g. the way of tutoring) and have to be re-tailored to current requirements and constraints coming from the established structure. The feedback routines from students concerning courses are poor, partly owing to stated imperfections in the standardized Aalto software. Efforts are emerging to develop the programme as a whole, based on both systematic and ad-hoc teacher discussions, but are hindered by the Bachelor's-level problems. The concept of an educational programme being more than the sum of its constituent courses is poor or largely missing in the description.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

None observed.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The discussion on individual learning differences and some implementations presented are interesting, and could lead to improved learning methods and results. The same applies to examination philosophy as stated. The system of giving feedback on assignments strongly supports the individual learning process. For the development of new education formats an elaboration of this feedback system might be very helpful. (q11).

c. In degree programme evaluation and development (questions 17-22)

Before the new feedback system was implemented, very efficient methods for collecting feedback and discussing the results with students existed, at least in some courses. In some cases this led to an immediate improvement, especially during the introductory phase of new educational formats. (q17). It seems that the new feedback system is not properly functioning for this purpose, which leads to frustration from the students and teachers.

4. Recommendations for improvement

The programme is strongly advised to establish a leadership that is different from the department management. This leadership must be given authority, and financial power, and must be supported by appropriate support and reference groups. Embryos of programme development are seen, but need more enthusiasm, vision and strategy, demanding verifiable results within a rather short time-span. The Panel strongly advises the programme to formulate a concept, so that their requirements, needs and wishes can affect the ongoing process of integration on the Bachelor's level. A non-integrated Bachelor's might cause even bigger problems in the future!

Teaching has to be valorised in the department; the potentials of new learning formats should be tapped as a resource for research too. The idea that all staff do both research and teaching (in different proportions) should not just be a commitment to Aalto policy (answer 2a), but also used in practice so that pedagogical training is required (answer 2e, 20d, 20e).

The workload discussions must be performed on a more verified basis. It seems strange that (answer 6d) a course seems to have been re-evaluated and re-created just based on student criticism; a more verifiable basis should be required, in order to avoid artificial discussions on the division of a degree education into its constituents.

The number of courses delivered (stated as 90) seems very high in relation to the number of students (and the number of teachers). It is believed that this high number is dependent on express demands from industry for specialized courses. For efficiency and stability, it is recommended that this number is reduced, and that courses with rather high degrees of generality are focused upon.

The Panel suggests that the programme creates a more elaborate tutoring and advice system, which does not just react to student requests, but functions proactively as a safety net for the students. Clear directives concerning the tutoring, and clear roadmaps for the students are an important goal.

The programme expresses good aims concerning exchange both intra-university, and nationally and internationally, but rather little is given as concrete plans. More exchange agreements are needed, and clear (simple and liberal) rules for the evaluation of external education must be formulated. (Preparedness for non-Finnish speakers should be considered.)

The degree programme expresses several important concerns about the basic studies in the Bachelor's programme (supported by the student interviews), but states that there is '...no active dialogue...'. It is recommended that the programme demands such a dialogue, so that the bridging between levels can become more smooth and efficient. The particular demands of this degree programme must be balanced against the efficiency of standardized basic courses. Development of the Master's level must start, without waiting for the full Bachelor's level development, using a new top programme as a lever in the basic level development.

Student feedback on courses and teaching must be more systematic and efficient. It is suggested that this feedback is seen as two separate stages. A first stage could collect mandatory feedback concerning the general health of the course from all students after a course, asking, for example, 'Was this a relevant step forward?', 'Did the course function practically?' and, say, three more questions, as a help to future student generations, and for management indicator information. At a second stage, much more detailed information should only be collected when needed, in connection with planned or demanded revisions of courses or modules. The development of such properly functioning tools must be requested by the programme leader from the School or the University.

Part B. Feedback and recommendations for the students of all degree programmes of the School

Students should demand a clearer definition of programmes, and demand to have a role in the continued development of the programme.

Students should demand that the theoretically liberal rules for the inclusion of courses/modules/semesters from other Aalto schools, and other Finnish or international universities, are not hindered by formal and administrative requirements. The student union should demand routines that also support trans-disciplinary excursions.

Students should demand a study allowance scheme which facilitates, supports and rewards the pursuing of studies at the nominal speed of 60 credits/year.

Students should demand a reliable and efficient system for course feedback to teachers and the programme, utilized in such a way that relevant adjustments can be introduced at least before the next event of the course. Feedback on feedback is a crucial aspect of this.

Students should demand a common study counselling system which is pro-active, as a normal day-to-day activity, but which can also act as a safety net if/when studies are not progressing.

Students should demand a course scheduling (at least of compulsory courses) which gives a reasonable distribution of the workload over the semester/year. We believe that the discussions on excessive workloads are rather related to such aspects than to total learning amounts.

Students are doing very important work on creating social networks with the help of guilds and other activities. These efforts are valuable both to the individuals actively involved and to the student population in general. We encourage all students to take part in the continuous development of programmes and delivery methods.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

The Panel concludes that the engineering programmes evaluated are mature, well-established and essentially well-functioning in their present forms. We, however, note within the framework of the Aalto ambitions that the activities need more risk-taking in order to become excellent. The background is that Universities are, and should be, all about change! Complacency and stability are fatal in the longer time perspective.

Aalto is strongly recommended to introduce a transparent, more incentive-based and output-based allocation system, in order to support (willingness to) change. These incentives should be related not only to research, but also to good quality teaching/education, and by this profiling programmes as a representation of the students' perspective and the research activities as the classic universities'/chairs' perspective. At present, the performance indicators evaluating the operation, productivity and development of the degree programmes do not support and reward development efforts in teaching.

Improving programme quality demands a clearer organizational structure. In particular, the master programmes are not defined as entities in the Aalto structure, which creates problems with responsibilities, powers, and resources, especially when two programmes are run by the same department, or when a programme is shared between two. Either a programme entity should be defined, e.g., as a second matrix dimension, or a structure must be defined where the (second level of the) M.Sc. programmes equal their departments.

The role and the powers of the head of the degree programme need clarification. The programme leadership also needs management and other forms of support, in order to guide the development. The programme internal structures must involve teachers as well as students, in order to be generally accepted and implemented. These programme internal organs need to discuss education, research and administrative issues, allowing the handling of deficiencies of studies, learning outcomes, course content and course feedback.

An important part of the organizational development of the programmes is a clear definition of the degree levels: What is the difference between a Bachelor's and a Master's? This is always complex in the traditional engineering education fields, but it is necessary, in particular for international recognition. There is a clear need for useful tools and approaches to design Bachelor's and Master's programmes. A 'Learning outcomes' approach is believed to be a useful tool at both course and module levels, as it is noted from reports and interviews that the programme view on the engineering degree programmes is rather weak beyond what comes from the composition of course packages. Aspects needed or desired from a working-life perspective are mentioned, but could be better exploited with a stronger emphasis on the programmes as wholes.

The Panel noticed (supported by student and staff interviews) that there are some educational problems over which the programmes/departments have limited control over. The learning outcomes of basic studies, especially those of mathematics and

physics, are not clearly defined and the contents of these studies do not always satisfy the needs of the B.Sc. programmes. The Panel was surprised to find that, although the problem was identified, no active dialogue was pursued with relevant parties.

The strategy followed by the School of Engineering to reduce courses, with converging/merging programmes is much appreciated by the evaluation group, even if the progress could be quicker. The composition of the programme, and the two-level form of education the major challenge. Success is highly dependent on the specific curricula. Thus, for setting up a successful road map for 2020 it is of the utmost important to clarify goals, strategies and elements within this transition process. A participative development process between the different stakeholders in the process should be intensified. Up till now, there has been no indication of this process in the reports. It is suggested that the school is responsible for the B.Sc. level programme(s).

A general observation concerning the engineering degree programmes is the low credit production rate of students admitted. From the outside view, this low intensity of studies is one of the most visible distinctions of the engineering programmes evaluated. This is leading to drop-outs, degrees at rather high ages, parallel work, and inefficient teaching in student groups of varying ability. Even if this fact seems to be generally accepted, the panel suggests that measures are taken, aiming at an increase in the students' learning efforts. Clarified educational structures, intensified individual follow-up routines, and incentives for rapid progress are suggested means for this. Similarly, we note that ongoing discussions on high student workloads do not seem motivated from an international perspective. Interviews tend to point to scheduling problems, rather than excessive total amounts.

For increased student activity, it is also suggested that the support, counselling and advisory systems be further developed. Today, it seems that every department has its own tutoring system and some of these are working well because of the involvement of the student guilds. On the other side, this is quite a big voluntary responsibility for students, which should be further acknowledged. It is also suggested that the counselling systems must be more systematic, and also proactive in the sense that they actively act in order to guide students who are falling behind the nominal study pace. Today, the support systems are responsive and reactive.

For excellence in education, the current global trends of mobility, in subjects and in geography, should be considered. Although students seem today to be allowed to add courses from other Departments and Schools, or semesters from foreign institutions, the practical handling and the bureaucracy around such exchanges seem be a major obstacle, leading to rather low 'de facto' mobility. It is suggested that Aalto finds formats which will also, in practice, encourage all forms of mobility.

The Panel also sees the format for student involvement in education development as rather weak. The feedback system used (WebOodi) does not seem to be working well, neither in itself nor in the utilization of its output. This topic is mentioned in almost all the self-evaluation reports and it also surfaced during student and teacher interviews: the students' rather low response percentage endangered the reliability and the validity of the feedback; the restrictions imposed hinder the use of the feedback for development purposes; teachers find the use of the system complicated and time-consuming; and the questions and answers given just in grades are too general and do not give enough information for the improvement of a course or a module. The Panel notes a demand for more systematic feedback systems from students to programmes, in order to improve

both individual courses and the programmes as entities. It is suggested that systems be introduced which ensure the availability of both the schematic management QA aspects of basic progress information on all courses given, and also of detailed information on diverse course aspects when development efforts are required or desired. One must ensure that the information obtained is available to all relevant parties. Also, in general, quality issues must be increasingly addressed, in new, more creative ways. The group view the recent appointment of a new co-ordinator of quality assurance for the programmes within School of Engineering in a positive way. This is of crucial importance, especially within the limitations of a fairly small scientific community/business environment in a small country.

In order to become an excellent university, Aalto must defend, emphasize and guarantee the connection between research and teaching. As one step, the Panel believes that the policy statement that teachers should do research and researchers do teaching is important for further development. The policy must be followed by incentives (to department and individual) which promote, for example, pedagogical education for everyone.

The need for research-based teaching does not imply that all the research efforts should be taught. The curricula of the engineering programmes today try to give a reflection of all on-going research, and, in particular, all faculty specialities. In all programmes, there are thus too many courses available, many of which have been in the curricula for decades, without recent reflection on relevance and methods. This seems to be a common problem among departments, and is one reason for the complaints about lack of resources. Core competence analyses, in relation to existing and expected professional roles and needs, are deemed tools that are necessary for creating modern curricula, with a high degree of mobility, leading to a professional knowledge potential.

Part D. Observations on the evaluation process and recommendations for improvement

The Panel considers the evaluation work as an interesting and rewarding experience. Good. It has been demanding, but the site visit arrangements and the service have been excellent.

The Panel realizes, and hopes that the recipients of our reports also realize, that we have only seen a snapshot of some limited aspects of the whole education activity, so our comments are at best emerging. We still hope they can be used in a good way.

The Panel thinks that the work would have been less demanding to all involved, and thereby have shown a higher degree of efficiency, if the objectives had been more clearly stated. The respondents have now been generally worried about the final outcomes of the evaluation, and have thereby often given answers they believed to be tactically or politically correct.

The evaluation has now been concerned with the whole package of engineering education, except possibly the teaching itself, and the exact contents of the courses. Our remarks are thus primarily in the form of general observations about the programme-oriented educations as a group. More accurate statements could probably have been reached, if the evaluation had focused on a more limited aspect of the teaching, e.g. its research connection. Such an approach would also have led to more reduced text materials; the present self-evaluation gave many long, often duplicated, texts, with limited precision. The Panel appreciates that the self-evaluation has been performed in a short period of time, has also been complicated with respect to the discontinuity of the organization.

The Panel would have preferred to have had shorter self-evaluation texts, but more background material. Statistics (preferably split between Schools and programmes) of student progress, degrees and opinions, curricula, and also organizational charts would have been welcome. A more narrow objective of the evaluation could also have given a better set of (and focus for) the interviews; in particular if the interviewees had been more prepared for the event, and if they had been either clearly parts of the self-evaluation, or completely independent of it.

Appendix A6

The School of Science

Computer Science and Engineering and Master's Programmes in Mobile Computing – Services and Security, Foundations of Advanced Computing, Machine Learning and Data Mining, Service Design and Engineering and Bioinformatics

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The Panel is extremely satisfied to meet an enthusiastic staff in the friendly and competent environment constituted by the CSE programme. In the self-evaluation, it is argued that the content of the degree programme (with the connected Master's programmes) is based on current research by the three departments involved. This image is confirmed by the interviews with the staff. Students, Finnish as well as international, also confirm that they clearly see this connection, and are happy about the quality of the content of teaching.

The interviews confirm that there is an open discussion climate, where the students and the staff jointly, but in different roles, work towards the aims of the degree programme. There is a system in place for formal course evaluations, which is often referred to by staff and students during the interviews. The programme listens to opinions put forward through this system, and is open for suggestions that are presented in other ways by the students. Still, the feedback loop is not closed, as the students report that they are unable to track that their criticism is leading to changes. This lack of information transfer could quite easily be overcome.

The open atmosphere invites teachers, as reported during the interviews, to collaborate to improve teaching and assessment. This has been exemplified to the Panel by the team of teachers in software engineering. Although progress is continuously made, both in software engineering and in other areas, students still report on discrepancies and overlaps between courses. This is an area for continuous development.

In this context, the reports about research in computer science and engineering education are encouraging. The staff indicates that the insights gained from this research are applied in current teaching. Influences can be found, for example, in the use of dedicated tools for teaching some subfields of computer science and in the teaching of the basic programming courses. This is an exemplar that the rest of the School of Science should aim to reproduce.

The programme is, as the Panel sees in the self-evaluation, and which is confirmed by the staff, open to future changes. Improvements are needed, for example when it comes to mobility and the teaching and learning generic competences. Both in these

fields and in the continuous development of the teaching, a clearer, more long-term oriented strategy would be an advantage.

To summarize, the content of the teaching is close to the research front and there is an open discussion climate within and between students and staff with the joint aim to improve teaching. In this way, the programme is open to future changes. The research in computer science and engineering education is applied in an excellent way in the teaching.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The staff's enthusiasm and the open climate of the degree programme is an excellent asset for the programme. The Panel is deeply impressed by this engagement and strongly encourages the programme to develop this quality.

Further, the students are integrated in the processes of the programme in an excellent way. However, the programme relies on the student guilds to an extent that does not guarantee sustainability.

The programme is, in an excellent way, close to the research that is carried out within the three departments. This guarantees that the teaching is in tandem with the research front. However, this requires continuous, attentive work, and the programme must never lose sight of its aims. The teachers collaborate in teams to create courses with the aim of developing the ways in which the courses are taught, and to align them to each other in such a way that discrepancies in the content are minimized.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

As is stated in the self-evaluation report, the students move in and out of the system. This is confirmed by staff and students during the interviews. The students risk facing difficulties as the coherence in their education might become invisible to them; the programme cannot take prerequisites for granted. At an emerging level, the programme is trying to tackle this, but much work on policy and implementation of this policy remains.

A large set of teaching and assessment methods is used in constructive ways within the programme. The Panel encourages the programme to continue and enhance this good work, which is recognized by students, staff and programme management.

The programme has no policy for how to handle diversity, such as gender issues or cultural awareness. For a programme that strives to be at the top, this is problematic.

c. Degree programme evaluation and development (questions 17-22)

The programme has mechanisms for collecting the students' evaluations of the courses, and normally implements changes in a good way. However, the loop is not closed, as students report that they do not see how their evaluations are used. In the interviews with employers and alumni, the Panel got indications that, although partly used, these stakeholder groups, and the opportunities they offer, could be better recognized as a part of the development of the teaching and as a resource, for example, in the teaching. This work is still at an emerging level.

Generic/Professional competencies are taught, partly through the use of varied teaching and assessment forms. Although this is a good initiative, a more structured approach is needed to advance the work from its current emerging state.

To keep these high ideals is demanding; the management must act proactively to keep this culture alive, and encourage the open atmosphere and the positive attitude towards making changes.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

The open and friendly atmosphere, inviting creative improvements in the teaching, is an extremely valuable asset for all future work of the programme.

The team work among the staff is also a crucial resource to nourish for the future.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

The courses are taught and assessed in a number of different ways. In this way, the varying learning styles within the student cohort are encouraged, at the same time as different aspects of computer science are focused on.

There is a clear link between the teaching and research in computer science and engineering education. The results from the research are brought into practice.

c. In degree programme evaluation and development (questions 17-22)

The programme is open to change based on the development of the subject area, the teachers' experience and the students' evaluations.

The programme works systematically on improving its teaching in close collaboration with the students.

4. Recommendations for improvement

Both the self-evaluation and the interviews indicate that the CSE programme is aware of some of the core challenges it faces, such as, for example, the high drop-out rates, and difficulties in teaching large groups of students, as well as the continuous need for a renewal of the content taught. During the interviews, the Panel has been informed about different means of tackling these problems, such as variation in the forms of teaching and assessment, and the introduction of specific teaching tools. However, these excellent renewals still do not tackle one of the fundamental problems: The students can move (as reported to us from the self-evaluation, the staff and the students) in and out of the academic system, and can study part-time or full-time. Although the programme is aware of this, it does not recognise the consequences for the individual students, and only offers limited support mechanisms to the students in their decisions on how to profit from this flexibility and/or how to handle problems if and when they appear. The counselling offered is, according to the students, not sufficient to tackle these problems.

The Panel finds it necessary to comment on the quite harsh criticism that the students' evaluation report for this evaluation exercise mentioned. The Panel has

not got other indications of the problems indicated there, but would still advise the programme to seriously investigate to see whether the criticism could lead to some possible improvements in the education or in the communication with certain groups of students.

The Panel is surprised to see the lack of strategy and awareness in issues related to diversity, such as gender issues and multi-cultural awareness. Such topics are not mentioned in the evaluation report; when gender was brought up during the interviews, the staff only recognized it as an issue of recruitment. The international students confirm this lack of sensibility for their needs, for example when it comes to the lack of mechanisms for social and cultural integration and welcoming. The Panel has also heard voices from some international students claiming that, although the content is interesting and relevant, they do not feel that the structure of lectures offers them the inspiration that they, with non-Finnish perspectives, need in order to learn. The Panel seriously advises the programme to explore the question of diversity at all levels of the programme and make changes accordingly.

In conclusion, the Panel finds that most of the important components for creating a world-class education are present. The degree programme needs to be braver and even faster in its actions not to risk leaning back on its old achievements, but instead continuing its work on developing and improving its education offering in a challenging higher education environment.

As a summary, the Panel proposes the following improvements:

- In the short run, the programme ought to investigate the problems reported on in the students' evaluation and, if needed, tackle any problems.
- The programme is facing problems with students who study and work in parallel. The actions that currently are taken are not sufficient; a holistic perspective is needed. This problem needs to be tackled systematically with different steps taken in both the short and the long terms.
- The programme must, at all levels, in both the short and the long term, actively handle diversity issues, such as gender and multi-cultural awareness.
- The programme functions well, but must work still harder, and faster, to develop its education in order to create a sustainable world-class education.

Engineering Physics and Mathematics

Part A. Feedback and recommendations for the teaching staff of the degree programme

1. Strengths of the degree programme

The degree programme is well known both nationally and internationally and has a strong brand built up over more than sixty years. The original goal of the programme was to educate engineers with a deep knowledge of physics and mathematics. The programme educates engineers with excellent skills and a large fraction of these continue their studies in PhD programmes. The mission of the programme today is still the same and the programme has been very successful in achieving the goals.

From the self-evaluation report it is evident that the recent research evaluation of the departments responsible for the programme revealed scientific quality of the highest level. This is reflected in the education of the engineers, where the programme is characterised by an excellent coupling between research and teaching. This coupling is ensured due to the use of special assignments where students work directly with the different research groups and selected students work in even closer collaboration beyond the usual summer internships.

From the self-evaluation report and the interviews it was clear that the students going into the programme have a very high score, in fact the highest score of all engineering programmes at Aalto. Thus, the programme has over the years attracted excellent students, and through demanding studies, these students have developed skills that make them extremely attractive for both industry and academia.

From the meetings with the Employers and the Alumni the Panel was very pleased to learn that the programme is highly valued and supported. The Employers were very well satisfied with the candidates from the programme and, especially, the combination of generalist skills and deep knowledge was mentioned as an asset.

The programme has an experienced staff and the many doctoral students are a resource for teaching assistance.

Even though the programme has existed for decades focus is also on improving the quality of learning by the use of modern information technology. The self-evaluation report mentions the use of e-learning in the systems analysis part of the programme and the utilisation of computerised problems (STACK) in mathematics, where each student is given different exercises. One course also includes collaboration with industry involving real industrial and economic problems as part of the systems analysis programme. Guidance for homework is provided (as part of the service teaching) in form of the “Laskutupa” initiative, where students can get help for problem solving.

From the self-evaluation report and the interview it is clear that feedback is collected from the students and used to further develop the courses. Feedback is collected both by using electronic forms and, in the first years, by using feedback groups.

The programme is very flexible allowing the students to choose between many different courses spanning the fields of the various departments. Courses are provided in the field of Biomedical Engineering, Energy Sciences, Nano Technology, Optics, Engineering Physics, Mathematics, Mechanics and Systems and Operations Research. These fields clearly show the diversity of the programme.

The main strengths of the programme are these:

- Excellent students
- Excellent coupling between research and teaching through experimental projects
- The programme is highly valued and supported by industry
- Experienced staff.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The Panel finds that the degree programme is planned and managed in a good way. Formal and informal bodies are defined and operative. Planning of the programme is through consensus which, however, makes it difficult to renew the programme or even change elements. The workload for individual courses is monitored in a good way; however, the combined workload for the different parts of the studies seems less clearly defined and on an emerging level. In the interview with the Students it was apparent that courses having the same formal workload (measured in cr.) could have very different actual workloads and give students problems as they plan their studies.

According to the comments of the student representatives, the general atmosphere in the programme is not completely satisfactory. In a recent investigation of the students' well-being, measured using the internationally accepted GHQ-12 method, a psychiatric morbidity score of 34% was obtained. The Panel is pleased to find that such investigations are performed, but were very concerned to find that no action is being taken based on the result. In the meeting with the department the result was just attributed to the fact that the programme is demanding. *However, a demanding programme does not need to lead to such results.* Thus, the mechanisms for dealing with such issues are poor and need attention.

In the interview with the department and with the students, the Panel observed that international mobility seems absent and only a few students take the opportunity to go abroad for studies at other universities.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

The programme has reserved 60 cr. for doing individual projects (special assignments and thesis works), in collaboration with the different research groups, thus creating an excellent coupling between research and teaching. These projects were valued by both students and faculty members and the Panel was pleased to find that such projects are seen as an important part of the programme.

In the interviews with both faculty and students it became clear that the tutoring of the students during the first two years of study could work better. Also, the students asked for more information about possible careers.

The teaching of the different subjects seems to be based mainly on traditional lecturing and assignments. Both the faculty members and the students were worried about “mass lecturing”, especially in the first study years where the number of students is quite large. Both students and faculty suggested that the solution to the mass lecturing problem is smaller classes which, however, due to the lack of funding, could not be implemented.

The Panel would like to point out that these problems are well known at other universities as well, and that several well described solutions for making more dynamic lectures exists in the literature.

c. Degree programme evaluation and development (questions 17-22)

Feedback from students is collected at the end of each semester and processed in the degree programme planning group that also performs a good job in taking action on the feedback. In the interview with both faculty and students it became clear that the percentage of students giving feedback on the teaching could be higher. In the interview with the students the Panel found that students do not seem to realise that changes are made due to feedback.

These changes could be better communicated to the students and more effort could be directed towards getting a higher feedback percentage.

The development of the pedagogical competence of the department seems to be only on an emerging level. Some teachers have participated in the courses in teaching and learning offered by the University. Aalto has a vision of providing “ground breaking” teaching, so the department must be proactive in instituting change.

However, a real learning community is absent and the Panel finds that a more professional attitude towards teaching and learning is needed.

During the interview with the faculty members and by reading the self-evaluation report it became clear that three departments responsible for the programme have a demographic challenge, as up to 50% of the professors will retire in approximately eight years. However, a tenure track system is in place and *the Panel strongly recommends including compulsory courses in teaching and learning* in the development of the new generation of researchers and teachers.

3. List of observed best* practices

a. In degree programme planning and management (questions 1-8)

Excellent coupling of research and teaching is built into the programme in the form of the special assignments.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Use of STACK problems in mathematics and of real industrial and economic problems and collaboration with industry (as part of the systems analysis programme).

Guidance for homework through the “Laskutupa” initiative.

c. In degree programme evaluation and development (questions 17-22)

Use of a student “well being” survey.

** It should be noted that the identified best practices are not ‘world leading’ but the best practices observed in the current programme.*

4. Recommendations for improvement

The programme has been very successful over the years. The Panel has noted that in the interviews the faculty members referred to the “good old days” many times.

The “good old days” are over and will not come back! It is time to shape up for the future!

Global changes and changes in society occur at a high pace and the Panel has identified six specific recommendations for improvements that, in the view of the Panel, can provide an even better education and help shape the programme for the future where the effects of globalisation and the requirements from the coming generations will challenge the programme.

- 1) Short term: To educate the visionaries of the future requires a high quality teaching and learning environment, and ensuring student welfare is certainly an important task for a modern university.
 - a) *It is recommended that the departments responsible for the programme improve their tutoring work in order to better secure progression and focus. As part of this, it is recommended that possible careers are made more visible, especially in the first two years of study.*
 - b) *It is recommended that the workload is adjusted for individual courses and course modules.*
 - c) *The Panel strongly recommends that a focus on student well-being be sustained and that there be active follow-up on the student well-being investigation recently performed.*
 - d) *It is strongly recommended that the programme develops an environment where excellence is created through collaboration instead of competition.*

- 2) Medium Term: The new Aalto University strives to be a gateway to the world and international mobility is expected to form a natural part of everyday life. Therefore, the Panel was surprised to see that international mobility among the students was almost absent and that the international diversity among faculty appears to be quite low.

The Panel suggest international mobility is promoted among the students and faculty.

- 3) Medium term: Aalto values its commitment to ethics, integrity and equality. The Panel was therefore extremely surprised to find that the issues of gender and diversity seem to be irrelevant to both the faculty members and the students. The Panel expected to see these issues raised both in the self-evaluation report and during the interviews. *The Panel strongly advises dealing with gender and diversity,*

thereby making the programme ready for globalisation and attractive for future generations.

- 4) Medium term: One main objective for Aalto is creating a community of students and faculty that shares a passion for learning and discovery. Creating a learning community is clearly an important part of reaching this objective.

The Panel proposes the programme gets inspiration from learning communities abroad and from the Strategic Support for Research and Education at Aalto.

- 5) Medium term: The Panel discovered that only a few faculty members had formal training in teaching and learning and was surprised to see that such activity was not valued by all faculty members. The question of the suitability of the training for Engineering Physics and Maths was raised. If there are concerns about this issue, then a discussion should take place and the concerns need to be addressed.

The Panel strongly suggests setting up didactical training of staff and supporting and valuing such training and the subsequent changes and sharing across the departments. To help this endeavour, the Panel suggests the training be compulsory for those on the tenure track.

- 6) Short term: During the interviews and reading of the self-evaluation report the Panel found that the programme is missing a clear strategy for the future development of the programme. Several important issues will soon come up including the definition of the Bachelor's programme, the international Master's programmes, and the programme will be challenged by the demographic profile of the departments. Furthermore, the students of tomorrow will have completely different requirements for their education and this will challenge the programme, which was defined and shaped to the requirements of the previous millennium.

The Panel strongly advises and encourages the programme to define a clear strategy and action plan for the future development of the educational efforts to comply with future needs.

Taking these suggestions into account can help to further develop and strengthen the programme, thus providing future students with an excellent education and will even strengthen the research performed within the departments.

The Panel wishes all the best to the programme and is looking forward to seeing the development of the educational programme and the fulfilment of the Aalto vision for "ground-breaking teaching".

Industrial Engineering and Management and Master's Programmes in Service Management and Engineering and Strategy

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The IEM degree programme has a very strong brand value in the Finnish industry and business world, which was confirmed through the interviews. The support was acknowledged so extensively that it might not even be totally appreciated in the department. The high level of students entering the programme creates a demanding environment that presents challenges for the education provision in the department and programme. In this circle it is important to critically evaluate the extent to which one ECTS is equal in terms of the workload across all courses. Based on the report and evaluation feedback some courses appear to have quite an extensive workload whereas others do not. This is a concern both of IEM students and students from other departments. According to the figures provided, DIEM is a very big service teaching (credits/teaching provided for other programmes or departments) provider. This emphasizes further the importance of establishing a more consistent approach to credit workload definition. High student ability cannot justify too extensive a workload programme-wise, not even with motivated students, because in the long run the accumulation will be problematic.

Students, administrators and teachers on the IEM programme appear to create an effective community, which is enabled by a relatively small annual intake. Intensive small group teaching wherever possible enables a spirit to develop where all students know and support each other, perhaps sometimes even competing with their fellow students. This competitive nature can benefit the students on the programme by promoting cohort cohesion and study completion in a positive way.

One of the strengths of the programme is the students' mathematical skills. This makes them amenable towards analytical engineering problem-solving (often through practical real-life industry cases) that combines managerial and business capabilities in an engineering context. The observation of an advanced class in SCM that used a simulation developed and delivered by a major Finnish company is a good example of this.

Expectations from the self-evaluation report were not totally met in the panel interviews. Overall, the self-evaluation presents effective processes and methods in several areas. These combine to reflect a core competence in IEM, namely that of "process management". The educational leader's ability to put theory into practice at the programme level was apparent, yet the team did not present themselves as particularly dynamic or forward-thinking – it was mainly maintaining the status quo. The Head of

the Degree Programme clearly indicated that he felt he had enough power to manage and develop the programme effectively. However, a clear articulation of the vision of the future was absent. What the department or programme wants to be and “how to get there” cannot be directly determined from the report.

More compelling statements from both the report and interviews give evidence of the success of the programme. The rate of graduation is excellent compared with intake. The education process must therefore work. Through the report and Panel work, we were able to see the planning inside the department being well organized, containing several ways and means of interaction all focused on fulfilling the requirements of the different stakeholders. The iterative process within the Department is not matched by the more linear process adopted at the School or Aalto level. This may create both challenges but also opportunities for the future Bachelor’s programme renewal at Aalto. The Department has an inclusive way of doing things involving all of the relevant parties (students, officers and teachers). For example, in the self-evaluation report it was documented that there was 100% participation of the personnel in preparing the report, including all researchers. The self-evaluation report has been prepared exhaustively, and in many cases noted challenges have been tackled, with some defined development paths already underway for improvement. Special attention to these improvement possibilities should be made, such that they do not get ignored as a result of the overall recommendations of the Aalto TEE.

Overall, everything appears to work well in the Department and in the programme. The cycle of continuous improvement seems to be in operation and some small-scale challenges and solutions have been presented in the report. However, studying the report and through the work performed in the Panel, the major concern is that the threats to the programme are not presented, thus creating a false idea of stability and security. The self-evaluation report outlines some changes emerging in business and industry but does not respond to these in a very comprehensive way. If the programme team becomes at all complacent, the programme will experience difficulty, especially if competition from outside Aalto increases. The fact that there were so many ‘excellents’ in the self-evaluation report should be discussed and a more proactive and questioning view of the future should be presented.

Programme strengths

- The programme has a very strong brand value in the Finnish industry and business world.
- The combination on mathematical skills and analytical problem solving (often through practical real-life industry cases) to managerial and business capabilities in an engineering context.
- The high level of students entering the programme.
- A relatively small annual intake enables students, administrators and teachers on the IEM programme to become an intensive and effective community.
- The Department has developed well organized, iterative planning and development process for the programme.
- The Department has enough power to modify and develop the programme according to its needs.
- The programme has good support from industry and has good quality visiting lecturers from outside Aalto.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The planning of the programme, including the annual process of review as presented in the interviews, is structured and at an excellent level. Students, officers and teachers have an opportunity and are expected to participate in the joint planning process of the programme. It is also significant that industry contributes to the planning process.

The changing nature of industry has been reflected in the changes made to the IEM programme as industry opportunities have become more diverse and global in nature. The IEM programme has kept pace with the employer demands in terms of both research and teaching.

However, the individual modules require constant review and refreshing when the environment demands.

Equalizing the workload across credits is challenging, especially in courses where two different options are offered in parallel. This requires constant attention even when students do not seem to worry about it, when the content motivates and learning takes place. In the long run, the workloads will have to be equalized towards a common Aalto standard.

Although some activity in pedagogical teacher training was noted, more needs to be done to promote this and share the ideas across the programme.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

Research and teaching appear to be in good balance at the departmental level. Doctoral students are integrated into the teaching within their area of interest and share the latest contributions in the field. Senior staff in the department are motivated towards teaching, and this provides an excellent foundation on which to develop a learning community. Course assistants and teachers appear to manage the support of mass courses reasonably well despite the high student – teacher ratio. Students, overall, are very happy with the level, methods and quality of teaching. In particular, the technical/business expertise of teachers in their own field has been recognized in the interviews. External recognition through the Finnish Higher Education Council nomination for the top national institution in university education has been achieved twice (for the periods 1997–98 and 1999–2000) and is commendable.

All in all, the programme implementation is at a very good level and the process works well. Service teaching at the School level provides a great foundation for students across a range of programmes, but there should be a more transparent and permanent mechanism to compensate the Department for that work. At present, funding appears to be unbalanced overall and lacking in transparency for all service teaching. The way in which this teaching is valued also needs attention.

Mathematical and engineering courses providing analytical engineering problem-solving combined with managerial and business capabilities provide relevant content to develop a variety of methodological competences in the students. Partly as a result of this, IEM students have been excellent in TIMES competitions organized by the ESTIEM organization.

Tutoring for freshmen and for international students inside the Department is intensive and appears to work but, outside the university, activities require attention at least for the international students.

c. Degree programme evaluation and development (questions 17-22)

Collecting feedback and tutoring are always difficult things, depending on the contextual factors. DIEM has an effective and clear process for collecting feedback and a defined process for dealing with it. However, extensive utilization of feedback often has constraints, particularly when there are resources or financial considerations, something that was shown to arise when mass courses at the basic level were being considered.

Teaching and evaluation methods appear to be somewhat traditional in some courses. However, the role of the final examination has decreased systematically in most courses, as advanced teaching methods have penetrated IEM education. Some of the mass courses have been developed, based on student feedback, and they have now started to utilize more advanced teaching methods such as web-based learning environments.

Several challenges inside the programme and its implementation were defined in the self-evaluation report, and some of the changes needed are under way. However, the programme team needs to constantly keep scanning other potential problem areas and opportunities, especially those concerning the changing external environment.

The Department has a good attitude towards development; they value themselves and the programme very highly. A more robust and well defined development strategy is essential if the programme is to retain its top position and handle any potential threats seriously.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

Department-level application of programme planning (involving all the staff in the planning, and also industrial partners).

Fully integrating the community: planning officers, teaching staff, students, alumni, industry.

Recruitment of top students.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

Service teaching: two option models for different purposes (programme students and students from other programmes).

Overall organization and implementation of web-based learning environments to the mass lecture environment enabling more emphasis on assignment-based evaluation.

Involvement of visiting lecturers and lectures from industry.

c. In degree programme evaluation and development (questions 17-22)

The development of an idea for monitoring credit accumulation (presented in the self-evaluation report) is excellent and should be extended at least to School level and perhaps also for the Aalto level as well.

Utilisation of web-based systems in the development of teaching and learning.

4. Recommendations for improvement

- 1) Aalto is aiming to be a world-class university. Industrial Engineering and Management appears to be effective in many ways and at many levels. The Panel noted that the team value themselves and the programme very highly.
The Panel suggests that an in-depth international benchmarking exercise can be conducted against some of the leading research and education institutions in the world. This recommendation will strengthen the programme's vision and could be implemented in the short term.
- 2) Teaching on IEM has received good feedback and the teachers' expertise is clearly recognized. All in all, the students are happy with the teaching quality. Service teaching has an important role within IEM and should be valued more highly. In these mass courses, the introduction of novel teaching methods should be a priority.
To encourage quality teaching, the Panel suggests the need for Teaching and Learning (T&L) to be implemented into the requirements for tenure track progression in the long run. However, development of T&L should also be emphasized among the current staff in the short run.
- 3) A main objective for Aalto is creating a community of students and faculty that shares a passion for learning and discovery. Continuous development of an open learning community is clearly an important step for achieving this objective.
The Panel proposes that the programme get inspiration from learning communities abroad and from the Strategic Support for Research and Education at Aalto in order to help develop this community.
- 4) As Aalto University aims to be world class, international mobility is expected to form a natural part of the student experience. In Industrial Engineering and Management international links are strong and tutoring has received good feedback inside the programme. However, the Panel noted that perhaps the programme is too "translated" into English. It also requires a change in the programme mindset to be truly international.
The Panel suggests continuous development and promotion of international mobility among the students and faculty. It could be a short term possibility to go through some graduate narratives from international students.
- 5) During the interviews and study of the self-evaluation report the Panel found that the programme is missing a clear vision for the future development of the programme. Several important issues will soon appear, including the definition of the Bachelor's programme, further development of the international Master's programme, and the programme will be challenged by the faculty age profile of the teaching departments. Furthermore, the students of tomorrow will have different requirements concerning their education and this will challenge the programme which was defined and shaped by the requirements of the previous millennium.
The Panel strongly advises and encourages the programme team to define a clear vision and strategy and actions for the future development of the educational efforts of the programme to comply with future needs.

- 6) One of the acknowledged strengths of the programme is the engineering identity. Close collaboration with industry offers a rich learning environment, but also ensures the competence base of the graduates such that they are ready to respond to the future needs of industry.

The Panel suggests intensifying collaboration with other engineering programmes especially with respect to the Bachelor's degree reform. The collaboration possibilities with the School of Economics and the School of Art and Design could be taken more seriously in order to realise the Aalto vision. There might be some short-run benefits in elimination of overlaps.

- 7) Aalto values commitment to ethics, integrity and equality. There was little emphasis on these in the reported material and interviews, which surprised the Panel. The Panel expected to see these issues raised both in the self-evaluation report and during the discussions.

The Panel advises dealing with gender and diversity more proactively, thereby making the programme ready for globalisation and attractive for future generations.

Taking these suggestions into account can help to further develop and strengthen the programme, thus providing future students with an excellent education. It will help to strengthen the research performed at the department level and fulfil the Aalto vision of ground-breaking teaching.

Information Networks

Part A. Feedback and recommendations for **the teaching staff** of the degree programme

1. Strengths of the degree programme

The Information Networks Programme is a comparatively new programme within the School of Science. The self-evaluation report highlights the programme team's view that many aspects of the programme management, implementation and evaluation are emerging. This was the conclusion of the Evaluation Panel, and credit should be given to the programme team for a clear and honest self-evaluation document. The major strength of the Information Networks programme is its multi-disciplinary nature.

The key challenge for the programme team is that they are a very small core and rely on teaching from other departments in the School. The claim that there is an open discussion culture was verified in the interview, although the informal nature was a cause for concern, especially since the programme leader is not in a position to exert influence on co-operating Departments. An emerging theme throughout the self-evaluation is a desire to expand the core team with at least one new member from the dedicated academic staff. Given the potential for the programme (it was well regarded in both the employer and alumni interviews), this can only be a beneficial step, as it will allow the inclusion of additional courses focused on the programme, as well as increasing the underlying research capability linked to the programme, an area that the Panel believed needed development.

Information Networks attracts excellent students, thus providing a solid foundation for the programme. The emerging linkage of course and programme learning outcomes was apparent in all interview sessions, as the programme identity was somewhat fuzzy, perhaps not aided by the flexibility of study options. Clarity is essential to maintain student engagement and will better support the students' competence and professional development. The students suggested that the Student Guild was a major source of guidance and that the personal study plan was not used as an effective tool. This somewhat contradicted the self-evaluation report, which suggested more active academic involvement.

A good gender balance in terms of both students and staff is a positive feature of the programme and should be encouraged in the future. Steps towards a more diverse international profile should be a goal for the future.

The programme team are clearly proud of their work to adopt more creative and engaging teaching approaches. The Panel felt that this was a very positive feature of the programme and should be encouraged and developed even further. The over-reliance on the Guild for transition and ongoing student support and guidance was a point of concern from the interviews. This did not come across in the self-evaluation report and is something that the programme team must explore to ensure that the academic and pastoral responsibilities of staff are not being overlooked.

With obvious steps towards variety in teaching, a similar strategy is needed for assessment. The self-evaluation acknowledged a continuing over-use of examinations. They are not liked by students and are of limited effectiveness. With more proactive management of the overall programme, a favourable development in the variety of assessment techniques will be achievable. Linked to this is the timely delivery of appropriate feedback to students. The report acknowledged variability in this area, something that was supported when examples of both good and bad practice were discussed in the interview sessions. Addressing the understanding of what constitutes 'good feedback', both on the part of students and staff, needs to be a priority for the programme.

The final implementation observation was that concerning students' workload. The report suggested an uneven workload across courses, a characteristic that was verified by both students and staff during the interviews. There exists some confusion as to how this can be addressed and the Panel suggests that the School of Science discuss this as a whole, across all Departments, and work towards a fair and practical solution.

The use of student feedback in influencing the programme development was identified as emerging in the self-evaluation report. This was confirmed in the interview session and suggests that the quality assurance process loop is not being effectively closed. The programme team also acknowledged that the solicitation and use of alumni and employer feedback was not effective. Again, this was an observation verified in the interviews with these stakeholder groups. The development of the teaching staff's pedagogical competence requires attention as does the utilisation of pedagogical research in teaching. Motivation was mentioned as a positive feature of the teaching team, but the Panel believes very strongly that this is not enough to achieve sustainable, evidence-based development of the programme and the teaching staff involved.

Finally, whenever reference was made to the evidence of/potential for linkages between arts and science, the self-evaluation report stated that this was 'not the responsibility of the programme'. The Panel felt that this was a missed opportunity and not in keeping with the Aalto philosophy. Managing a multi-disciplinary programme such as Information Networks is both challenging and exciting. The latter can be enhanced if the programme team embrace the Aalto idea more fully and think creatively about the future potential for the programme and its attractiveness to society.

Programme strengths

- A very diversified and multi-disciplinary offering that matches the requirements of many employers demanding a technology/society blend.
- No history to act as a 'burden' for future programme development.
- The use of a variety of teaching approaches to engage students.
- A strong Student Guild that helps give the programme an identity and has helped develop and sustain an engaged student community for the programme.
- The programme is student-centred.
- A small intake that allows more personal interaction between students and staff.
- The programme operates effectively and is an example that other Aalto programmes could follow, possibly when considering the new Aalto Bachelor's Level degree programmes.

2. Evaluative feedback

a. Degree programme planning and management (questions 1-8)

The programme management team should use the newness of the programme and its lack of history to better define the challenges of this type of multi-disciplinary programme. With sound understanding, the co-ordination of ideas, staff and processes, all of which place special demands on the programme leadership, will be more effectively managed. At present, the emerging approach to programme management lacks transparency, relying on informal networking by individuals and across Departments. Although these contacts are important to some extent, they should not be relied upon and steps to better manage the political environment are essential if the programme is to develop and remain fresh to both students and employers.

The core team is the custodian of the programme and clearly believes in its value. The way to sustain and develop the brand is to ensure that complacency does not set in and that the approach to planning and management is evidently proactive and inclusive.

b. Implementing teaching of the degree programme courses and modules (questions 9-16)

It was encouraging that the programme leadership had their own budget for teaching and were comfortable with its size and the amount of authority they were able to exercise over the programme operation.

Again, the Panel would echo the earlier comments that more proactive involvement in guiding the programme implementation across departments is essential. Liaising with colleagues to ensure the programme has meaning and that the teaching practices are both engaging and relevant is essential in ensuring a valuable student experience. The emergent use of innovative teaching approaches is a sound foundation on which to build.

The reliance on the Student Guild for student support was a concern. Information Networks is fortunate in that essentially all of the students are currently Guild members, something that is not common. The programme team should explore ways to institute an effective tutoring system, embracing colleagues from all Departments teaching on the programme, to ensure there is an opportunity for every student to have an academic advisor. In developing this system, the staff involved should undergo some training to ensure consistency of experience for the students. It would present an opportunity for teachers to communicate the context of the programme to students and aid them in developing a meaning for their study and a well thought out choice of courses, something that can be stressful for students.

c. Degree programme evaluation and development (questions 17-22)

The active programme committee was a positive feature of the programme. Regularly meeting to discuss all aspects of the programme was viewed by the Panel as an essential component of a healthy programme. This should be developed to ensure that it is truly all-embracing and includes student representation as well as that from all of the departments teaching on the programme.

There was limited evidence of the proactive use of student feedback. This was made more difficult as a result of the neutral nature of much of the feedback. The evaluation and development remains in its infancy and will only become effective once student,

alumni, employer and staff views and ideas are brought together, properly analysed and used as the basis for a clear programme development strategy.

The staff's pedagogical skills need developing. With attention to this area, as well as the application of existing pedagogical research, enhancements such as the introduction of PBL will become more commonplace and benefit the student learning experience.

As with programme planning and teaching implementation, the approach to programme evaluation was considered by the Panel to be between 'emerging' and 'good'.

3. List of observed best practices

a. In degree programme planning and management (questions 1-8)

- The multi-disciplinary nature of the programme structure
- Flexibility of study choices for students
- Clear encouragement of student mobility.

b. In implementing teaching of the degree programme courses and modules (questions 9-16)

- The wide variety of teaching approaches, especially the use of PBL
- Personalised feedback to students wherever practical
- Strong Student Guild support structure for students.

c. In degree programme evaluation and development (questions 17-22)

- A proactive programme committee that embraces course feedback
- Strong teacher co-operation in making the programme work effectively
- Although still emerging, a clear willingness to keep the content current and the programme fresh.

**It should be noted that the identified best practices are not 'world leading' but the best practices observed in the current programme.*

4. Recommendations for improvement

Short term recommendations

- There should be more systematic communication with the staff teaching on the programme, possibly in the form of regular 'all staff' meetings.
- The programme should ensure that it has a meaning and a clear aim. 'Flexibility with a purpose' should be the guiding idea. The meaning and aim should be effectively communicated to all teaching staff and the student body.
- The special demands of a multi-disciplinary programme need to be acknowledged and the core team need to take more responsibility for what happens in other departments rather than just relying on ad hoc feedback and informal networking.
- The strong Student Guild should not be seen as a replacement for academic responsibilities in supporting and developing the students studying on the programme.
- Support for students, especially in the form of guidance and counselling when

considering academic choices, should be enhanced to develop the sense of belonging to and coherency of the programme.

- Student mobility should be developed further, in particular through the introduction of a clearer, more informative and less bureaucratic process.
- Quality teaching should be more effectively monitored and promoted e.g. through peer observation, pedagogical training and regular sharing of good practice, in order to develop a strong learning community around the programme.
- Feedback should be clearly understood by staff and students and good practice guidelines should be considered for staff to work to.
- The quality assurance process needs to be more effectively implemented with clear evidence that action has been taken and that the actions have been communicated to both students and staff.

Long term recommendations

- Despite being a comparatively new programme, the team should ensure that they embrace the need for programme renewal and do not become complacent as a consequence of the programme's success.
- The variety of different approaches to teaching should be continued and developed even more extensively e.g. using more ICT in education.
- Pedagogical research by staff should be encouraged and then made use of in all aspects of programme development.
- More effective and innovative use should be made of alumni and employers in developing the programme opportunities, not just for students, but for staff as well.
- The good gender balance should be maintained and a strategy to develop a more diverse international component to the programme should be explored.
- As Aalto moves to a core set of Bachelor's programmes, the Information Networks model should be seen as an inspiration for the discussion and subsequent decisions.

The recommendations are not prioritized as it is seen as important that all are addressed. Local discussion is suggested to determine an action plan at the earliest opportunity.

Part B. Feedback and recommendations for the students of all degree programmes of the School

The Panel met motivated and talented students during the interviews. The students gave open and honest impression during all interviews. We appreciate the welcoming atmosphere we have experienced throughout the week from all the students we have met.

Aalto University is a selective university and recruits the top, most talented students in Finland. A clear message came through in many interview sessions; the students are great problem solvers. But Aalto University needs to aim higher and to create a community of students and teachers that shares a passion for learning and discovery. A passion to be like this cannot be hidden behind the Finnish conservativeness and passivity towards expressing oneself.

From the interviews and self-evaluations it became evident to the Panel that student engagement and activity in the School of Science is good. Students are, in most situations, part of the community and interact with it, but could take a larger responsibility for their part of the quality culture. The Panel can conclude from the interviews that students are satisfied with the teaching and the use of different teaching methods.

The Panel noticed a major challenge in encouraging Aalto students to mix thoroughly rather than remaining with their peers, who share similar backgrounds and interests. A truly international atmosphere was not experienced as such. Internationalization should be taken more seriously as a way to develop the Aalto and School cultures around teaching and student activities. Also, neither staff nor students seemed to think the gender balance was a dilemma. Aalto needs to create an environment for cultures to integrate and support diversity. Students are instrumental in making this happen.

The Panel saw that the guilds have a major role in the social side of student life, as they co-operate with degree programmes and create networks outside the School. Guilds were relied on too much by degree programmes in the areas of student support, information distribution, collecting feedback and for the development of programmes. Some of this work should be more normally integrated into the programme's academic routines where the responsibility rests. It should be remembered that the guilds do not represent all the students of the programmes. Nevertheless, it is important that students take a proactive part in the development of programmes both inside and outside the programme working groups and, for example, by using alumni to support their objectives.

Interviews with teachers and study co-ordinators showed that students who take active roles in developing teaching are an important part of Aalto's way forward. The Panel recommends that students could be the force to spread ideas of good teaching methods inside the School to different departments. They can help to create new approaches to teaching because they can express most easily what suits them best in the classroom. Feedback concerning courses and teaching is given quite well in the School, but more can be done, something that was clearly evident in the interviews with both students and teachers. University and School level feedback concerning

programmes could be given on a more regular basis to ensure the continuous development of programmes. Students should also request more feedback on their work from teachers in order to ensure that the feedback loop is working effectively. Recognizing and rewarding good teaching is important and encouraging to teachers, yet it is not particularly common.

The Panel considered that there is more to be done to achieve a better student learning experience and students have a role to play in this. Students should be active learners, which means that they should be more involved in contact teaching and study coordination support. The Panel thought that Aalto has a great culture to get students to become problem solvers but that students could also challenge themselves more during teaching. Students could also participate in research, which the Panel saw was a good way to make learning more practical, as is done, for example, in Maths and Physics.

The Panel hopes that in the future students will demand more and challenge the programmes, School and the University. They should demand new teaching methods, take responsibility and be part of quality culture and management inside the School and University.

Recommendations for the Aalto students of the School of Science

- Create an open atmosphere for cultures to integrate as a part of everyday learning and student activities.
- Challenge everyone to excel.
- Always challenge yourself a little during studies.
- Utilize the tutoring offered and support it to develop.
- Be proactive in developing the programmes. Give feedback and ideas experienced in studies.
- Take greater responsibility for developing the programme, and School and University quality culture.
- Give credits to teachers and other staff members for their excellent job.
- When giving feedback, demand it also in return.

Part C. Feedback and recommendations for the leadership of the School and Aalto University

Aalto University is a young university with old traditions and a bold new vision. Aalto University already has a strong brand internationally; the Panel and several others do have great expectations of the University. Aalto University is expected to do things differently and become something more than just a traditional university. The University will have a golden opportunity in the coming years and it will be important to make full use of the chances before this window of opportunity closes.

Leadership

In order to fulfil the challenging Aalto mission and to be a new multidisciplinary university where science and art meet technology and business, a more proactive and stronger strategic leadership is demanded at *all levels* - not only at the top management. Aalto's mission and vision seem not to have penetrated to all activities yet. It must be more obviously visible at all levels and must reach out to the newly formed Schools, becoming concrete at the department level and thus creating enthusiasm and passion among staff and students rather than fear and uncertainty. The students and staff must create the Aalto spirit and attitude.

It is a new university and, as such, time and emphasis have to be arranged to let bottom-up processes meet those from the top down. There is a challenge for the leadership at all levels to define and implement strategies to fulfil the Aalto vision and still support creative initiatives from the Schools and Departments. If this is not achieved, the University could end up in a situation with the leadership and management going in one direction and the Departments in another. The Panel recommends that the University put a high priority on enhancing the strategic leadership and management on all levels, thus supporting multidisciplinary research and education. There are large challenges ahead and the leadership must have the tools to tackle them with. To achieve this, it is crucial that the leadership of the Schools is a genuine part of the University management. The Panel also suggests a joint leadership programme for managers at different levels.

The Panel acknowledges that a lot of energy is being put into the creation of Aalto University and getting common and consistent routines in place. However, the Panel was surprised to notice the absence of pro/vice deans in the School of Science. In particular, in the current situation with a merger and reforms, the workload on a single person is too large and, in keeping with modern leadership practice, School leadership usually consists of a team. A high priority must be to get a strong management team together as soon as possible.

Responsibilities

When considering the distribution of responsibilities in the management of education, a more pronounced educational leadership at all levels is demanded, in particular with regard to clarifying different responsibilities. The status of the Heads of Degree

Programmes and their role must be clarified and be given a real mandate, including resources and time allocated for them to perform their duties. In addition, the Panel finds that the University has many working groups and committees whose roles are unclear.

On the whole, the Panel recommends Aalto develop a governance model with clear roles and mandates which supports change and developments - not only to secure the status quo but to take the Schools and University forward.

Pedagogical Development

The Departments in the School of Science have some excellent teachers working in a strong research environment. The Panel found much evidence of good practice in learning and teaching and is convinced that there is plenty more which did not become apparent from the self-evaluations and interviews.

As a university, Aalto University wants to provide high-quality research and education and create an internationally attractive environment for learning and research. To achieve this one cannot rely on a few good teachers. Rather, all members of the staff must be responsible and, together with students, create a quality culture and a common learning community. Teachers who are passionate about their subject, their research and their teaching are a key ingredient in developing this community.

The Panel could not observe a well-defined mechanism for sharing good practice across the departments, the School or the University as a whole. Moreover, while some members of staff seemed aware of current developments in teaching and learning, a mechanism appears to be lacking that would ensure that all academic staff are kept up to date with developments.

Therefore, there is a need to raise the awareness of staff, to continue developing the learning environment and create a learning community to ensure an exchange of good practice, in a more systematic way and on a regular basis. The Educational Development Team ought to be a central player in this development. Good initiatives have been taken by the Educational Development Team in developing international networking/collaboration opportunities.

All departments should be using the pedagogical training of teachers in a more strategic way. Until a learning community is created in all departments, pioneering teachers need to have a meeting place to foster new ideas, share and develop new practice for the future. Why not create a Learning Factory integrated with the Educational Development Team? This could be a source of inspiration for the whole University and create ground-breaking teaching.

The Panel also recommends that Aalto University make teacher training compulsory and build it into both the tenure track and the lecture track. This will truly differentiate Aalto as progressive and student-focused.

Human Resource Policy

There will be numerous retirements in the coming years. This requires strategic human resource planning for the replacements. The Panel noticed a low number of women professors in the School of Science and was stunned *that this is not seen as an issue and that it needs to be addressed* by either staff or students.

The Panel advocates an emphasis on having a balanced excellence so the School/University takes pride in having both excellent teachers and researchers, not only one

or the other. We encourage the University and School to start improving the present situation by designing a strategy and by establishing an action plan. In the planning, an emphasis on gender and the need to recruit more staff with an international profile is required to add to the diversity and quality of the faculty. Gender is also an issue that the School needs to address in relation to recruiting and retaining students.

The Panel also advises the School to monitor the data on the teaching load of individual staff members as part of the human resource policy to ensure a fair balance.

Student Learning Experience

Aalto University strives to create a community of students and teachers that shares a passion for learning and discovery.

The Panel was concerned about the overall learning experience of students at Aalto University. Throughout the discussion with students, programme staff and planning officers it became apparent that the tracking of students and the knowledge of their learning experience within the School of Science was limited. In a modern university this relaxed approach that seems to allow students to come and go as they please is not considered acceptable. If Aalto has aspirations to increase international student numbers or if student fees become a reality at some point in the future, much more attention will need to be paid to the learning experience or Aalto will not benefit.

The University must maintain a focus on student well-being, student support mechanisms, retention rates and progression characteristics. Without these, students have the potential to get lost in the system. It is not a case of ‘mothering’ them or restricting their ability to make decisions for themselves; it is more a case of being a responsible place of learning that strongly acknowledges its duty of care for students who are people and not just a series of numbers on a spreadsheet. KPI’s (key performance indicators) in these areas are strongly recommended.

Several programmes ought to work on retention in a more systematic way. This also applies to Aalto as a whole. There is plenty of good praxis done by other universities: different Early Warning Systems (EWS), Supplementary Instruction (SI), with older students as mentors in study groups and Personal Development Plans (PDP).

A more consistent approach to quality assurance is needed. This could be a joint venture for Aalto University as a whole to develop a framework for quality assurance across the University, in particular, to introduce a systematic approach to internal accreditation for new programmes, cyclic programme evaluations (preferably including external peers), tracking alumni and employing a model for ECTS and the development of a more consistent workload.

The Panel appreciates the culture of Finnish Higher Education, a culture of flexibility in study and, in most circumstances, part-time work. Yet if Aalto wants to truly become a university in the modern age, it must embrace the student learning experience as a driver for change and ensure that the institutional culture creates a healthy, inclusive and caring learning environment.

In the current situation, there is no clear distinction between the Bachelor’s and Master’s. Students can study Master’s courses without having completed their Bachelor’s degree. We do support the idea of a more distinct separation and that students have to complete a Bachelor’s degree before being accepted for a Master’s programme.

Internationalization:

Aalto University strives to be a gateway to the world and international mobility is expected to form a natural part of everyday life at Aalto. The Panel could also learn from the interviews that the University has increased ambition regarding internationalization. The Panel agrees with the ambition and suggests that Aalto could enhance the quality of its education by focusing on opportunities offered by better internationalization of the education offered.

Though it is not feasible to assume that international students can just enter the Finnish system without a well thought out approach and strategy, the Panel was troubled to learn that there is no introduction for international Master's students. Furthermore, from interviews we learned that Finnish and international students do not integrate enough. Employing international students to work in companies is also an issue which needs attention.

From the Panel's view, the current learning environment is not appropriate and adjusted to manage diversity and gender in a positive way. To meet this enhanced ambition, a more genuine strategy has to be developed towards marketing, recruitment, introduction, integration and support for students. This strategy needs to be implemented all the way down to the classroom and perhaps also through the guilds, which need to accept the non-Finnish students.

Funding

The Panel could not in all cases determine whether there was a teaching budget or if there was any control over the costs and resources employed on a programme. It was also unclear as to how efficiently the programmes were operating. The Panel got the notion that there is an inherent culture to ask for more resources when there is a need to modify or make some developments rather than change priorities or reallocate resources. Also, from the self-evaluation reports and interviews it became evident that another more transparent and sustainable model is urgently needed for the service teaching undertaken within the School.

On the whole, the Panel recommends the University to adopt a new funding model. A resource allocation must be applied with incentives too for the development and enhancement of teaching practice.

Industry

Support from the surrounding society is wide, in particular from industry. We do perceive it to be an untapped potential for the School of Science and Aalto University.

Summary

We had the pleasure to meet many motivated students, who are enjoying their studies at the University, as well as engaged and professional staff. Examples of good praxis have been given, and the panellists are convinced of the great opportunities and potential of the School and Aalto University. But it requires more decisiveness and strategic thinking in educational matters and an awareness of the benefits of professional and high quality teaching to take the education to a higher quality level for the future. The student learning experience must become much more of a focus for all programmes within the School of Science.

The Panel recommendations to the leadership of the School of Science and Aalto University

The Panel recommends:

- putting a high priority on enhancing strategic leadership and management at all levels, which will support multidisciplinary research and education. The Panel also suggests a joint leadership programme for managers at different levels;
- creating a Learning Factory;
- creating a vibrant learning community;
- rewarding good teachers and including teacher training in the tenure and lecture track;
- making a more distinct separation between Bachelor's and Master's degrees, and the requirement that students have to complete a Bachelor's degree before being accepted for a Master's programme;
- improving the tracking of students and the knowledge of their learning experience within the School of Science. KPI's (key performance indicators) in these areas are strongly recommended;
- taking a more systematic approach to quality assurance including internal accreditation for new programmes, cyclic programme evaluations (preferably including external peers), tracking alumni and employing a model for ECTS and the development of a more consistent workload;
- meeting an enhanced ambition on internationalization through a more genuine strategy developed towards marketing, recruitment, introduction, integration and supporting students;
- developing a governance and funding model which supports change and developments - not only to secure the status quo;
- having gender and multi-cultural issues on the agenda.

Part D. Observations on the evaluation process and recommendations for improvement

The Panel applauds the University's good and courageous endeavour in conducting the Teaching Evaluation Exercise, and we wish to congratulate everyone on the superb organisation of the site visit. It is an excellent initiative for a research-intensive university and evidence that the University is taking teaching and learning seriously.

The Panel found evidence of good practice in learning and teaching and is convinced there are many more examples which we did not uncover. Altogether, it was not possible to get a complete picture with the material and limited interview sessions; most likely there is good praxis the Panel has missed and thus cannot acknowledge.

The self-evaluation reports were mostly well written, but gave a rather limited insight into the educational situation of the programmes. In most of the interviews, the tone was open and honest, and the panellists valued all the discussions with staff and students. However, the Panel was able to note different ambition levels and engagement from the different programmes and departments towards the TEE. The Panel strongly encourages all to take such an exercise seriously and make the most of the opportunity. To be self-sufficient and to believe it is good enough to continue just as it has been is not sufficient in today's globalised competitive world.

More work on the layout of the self-evaluation reports sent to the panellists could have been done. They were difficult to read (too small font) and became somewhat tedious and repetitive. The members of the Panel also felt that it would be better not to have mixed interview groups for future evaluations. It is better to have separate interview sessions for students, teachers and management. The time with each programme was limited and the Panel would have liked to have had more.

As a whole, the Panel congratulates Aalto University on a well-organized and ambitious endeavour and it is our sincere hope that our input as a critical friend could be viewed as constructive input to the development of Aalto University for the future. Special thanks to Lena, Reetta and Ilona.

For all members of the Panel, the TEE has been a great learning experience, and we are all grateful to have been invited to participate.

Appendices B:

**Teaching and Education
Evaluation Documents**

Appendix B1. The Project Organisation 2010–2011

Steering Committee

Professor Martti Raevaara, Vice President (Academic Affairs), Chair
Professor Seppo Ikäheimo, Aalto University School of Economics
Dr Marjo-Riitta Järvinen, Quality Manager, Lahti University of Applied Sciences
Mr Antti Karkola, Student of Technology,
Aalto University Student Union (starting from 1.1.2011)
Professor Teemu Leinonen, Aalto University School of Art and Design
Professor Lauri Malmi, Aalto University School of Science
Professor Risto Nieminen, Aalto University School of Science
Dr Tuija Nikko, EMBA, Director of Quality and Accreditation,
Aalto University School of Economics
Mr Janne Peltola, Student of Technology,
Aalto University Student Union (until 31.12.2010)
Dr Seppo Saari, Adjunct Professor, Project Manager, University of Helsinki
Professor Ari Sihvola, Aalto University School of Electrical Engineering
Professor Jukka Tuhkuri, Aalto University School of Engineering

Co-ordinators at Schools

Mr Sakari Heikkilä (Ms Iina Ekholm, Ms Noora Jaakkola), School of Art and Design
Professor Reija Jokela (Ms Pirjo Pietikäinen), School of Chemical Technology
Ms Kirsti Keltikangas (Ms Eeva Seppä), School of Electrical Engineering
Ms Mari Knuuttila (Ms Tarja Timonen), School of Science
Dr Tuija Nikko (Ms Riitta Peltonen), School of Economics
Ms Ritva Viero (Ms Mari Martinmaa), School of Engineering

Evaluation Project Team

Dr Lena Levander, Project Manager, Rapporteur for the Steering Committee
Ms Reetta Koivisto, Project Planning Officer, Secretary for the Steering Committee

Student Guides

Mr Aamer Chaichee, Ms Ilona Mäkinen, Mr Pauli Pakarinen,
Mr Tuukka Pykäläinen, Mr Jere Pääkkönen, Ms Elena Suutarinen

Appendix B2.

Instructions for Self-Evaluation for the Degree Programmes

Teaching Evaluation Exercise 2010-2011

Implementation of the evaluation and instructions for self-evaluation

Theme: Degree programme evaluation

Contents

1 Background and starting points.....	1
2 The focus and aims of the evaluation.....	2
3 The implementation and coordination of the evaluation.....	3
4 Self-evaluation.....	5
5 Structure of the self-evaluation report.....	8
6 External evaluation, site visit week, feedback and final report.....	9
7 Consequences of the evaluation results.....	9
8 Appendices.....	10
8.1 Appendix 1a: Self-evaluation questions in English	
8.2 Appendix 1b: Self-evaluation questions in Finnish	
8.3 Appendix 2: Glossary, English-Finnish	

Background and starting points

A Research Assessment Exercise (RAE) was carried out at Aalto University and the outcomes of the exercise were published in the Striving for Excellence Report (2009). The Board of the Aalto University Foundation decided during the RAE process that teaching would be evaluated immediately afterwards. The Aalto University Teaching Evaluation Exercise (TEE) was initiated in spring 2010 by the Board and will be carried out during 2010-2011.

Aalto University strives to systematically evaluate the quality of its learning and teaching as well as its education processes. The outcomes of such evaluations are used for continuous improvement, supporting students' learning and sustaining the work of teachers. The aim is to enhance and develop an encouraging culture of evaluation based on interaction and mutual appreciation. As Aalto University aims to build an elevated atmosphere that inspires continuous learning, it is important that teaching is based on high-quality research and education in the different fields of the University. The evaluation process is a tool to obtain information about what is well and what should be revised.

Teachers and students play a central role in both carrying out the evaluation and utilising its results. The TEE will be an important stepping-stone in creating concrete tools and practices for a dynamic culture of evaluation, including constructive practices on how to give and receive feedback.

The focus and aims of the evaluation

The evaluation focuses on the practices and issues of planning, management, implementation and development of the undergraduate and graduate degree programmes at Aalto University. The evaluation does not concern the content of the discipline areas' education nor the quality assurance system, but rather some educational practices that are considered key issues in the management of education at the degree programme level. The results of the evaluation, as feedback and recommendations from an external evaluation panel, will form the main conclusions of the evaluation. Moreover, the degree programmes are asked to review their present state against the development areas of teaching and learning as outlined by Aalto University's strategy. This information will be used to refocus the current development areas for the next strategy.

The aims of the evaluation:

- To identify the strengths and weaknesses of the degree programmes of Aalto University
- To find and share best practices, to develop next practices and create new innovative teaching approaches
- To recognise areas that require specific action for improvement
- To obtain information that can be used for enhancing students' learning
- To obtain information that can be used for sustaining teachers' work
- To support the building of Aalto University's teaching and education quality assurance system
- To develop the implementation of the evaluation process for future evaluations
- To use the feedback and recommendations for continuous improvement and connect it to the annual planning process.

The quality of teaching and learning as well as the educational processes is an outcome of many factors whereby teachers, students and the entire learning environment make a complex and dynamic whole. Moreover, quality usually has many interpretations. These aspects add to the challenge of defining the most focal issues in order to enhance the quality of teaching and learning. The aim of TEE evaluation is to identify some salient issues with the help of peers from other universities.

The model of the process for the Teaching Evaluation Exercise is adapted from the enhancement-led four-phase model promoted by The Finnish Higher Education Evaluation Council (FINHEEC)¹. Apart from the four phases, namely coordinated planning, self-evaluation, external expert evaluation and public report, the important characteristics of this model are developmental feedback and recommendations and students' participation in all phases of the evaluation process. Moreover, the TEE self-evaluation themes are in line with the ones used when applying to FINHEEC for status as a Centre of Excellence in university education.

The principles for the planning and implementing of the TEE evaluation are based on the view that evaluation is a formative and appreciative process rather than a summative

¹ Moitus, S. & Saari, S. (2004). From methods to development. The evaluation methods of Finnish Higher Education Evaluation Council 1996-2003. Abstract in English. (In Finnish: Menetelmästä kehittämiseen. Korkeakoulujen arviointineuvoston arviointimenetelmät vuosina 1996–2003.) The Finnish Higher Education Evaluation Council Publications 10:2004. Helsinki.

and judgmental one. Evaluation is naturally framed by the context it occurs in and by diverse interests; however, it should be regarded as an interactive and collaborative learning process for all. The salient point is that the evaluation aims for enhancement rather than defines what is right or what is wrong².

The implementation and coordination of the evaluation

The TEE evaluation will be implemented in several stages (see Figure 1). The most important stage is the self-evaluation process carried out conjointly by the degree programme leaders, teaching staff and students. The degree programme leaders are in charge of compiling the self-evaluation report; however, they work it out together with teachers that contribute to the teaching of the courses, planning officers and the students studying within the programme. The students are encouraged to participate actively in the self-evaluation process of their respective degree programme. The self-evaluation report will describe and review the programme as outlined in the self-evaluation instructions. The process of self-evaluation and the guiding questions are presented in Chapter 4 and Appendix 1 (in English and Finnish). The language of the evaluation documents is English.

The external evaluation is carried out by six panels consisting of five to six members. Each Aalto School has its own panel. The external panels will use the self-evaluation reports and some supplementary documents as the starting point for the evaluation task. The supplementary documents are provided by the evaluation project team. (The list of supplementary documents is on page 4.) The site visit takes one week and the panels interview several groups, such as programme leaders, teaching staff, students, alumni and employers' representatives. The panels' feedback and recommendations will be published as a report with other documents gathered during the evaluation. The actions to be taken following the panels' feedback and recommendations will be discussed by the University leadership and the programme leaders during a discussion round.

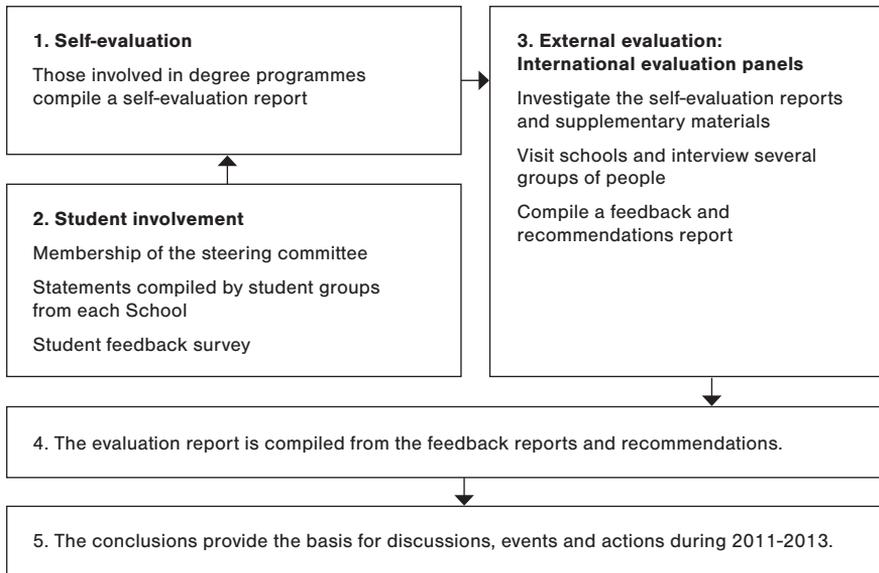
All the documents accumulated during the evaluation will be made internally public to enhance the transparency and openness of the evaluation process; however, self-evaluation reports are not published in the final TEE Report or elsewhere by the project team. Besides the evaluation panel members, the self-evaluation documents are available for the University and School leadership, steering group members and educational development staff at the unit of Strategic support for research and education. The Schools, Departments and those involved in degree programmes can decide to make public their self-evaluation reports. However, the questions and responses should be discussed collaboratively and the collaboration should have broad-based participation. There also has to be open access to the final self-evaluation report for all who are involved in the planning and implementing of the programme, and for the students studying within the programme.

The President of Aalto University, Tuula Teeri, nominates the steering group members and the panel members. The Vice- President, Martti Raevaara, is in overall charge of the evaluation and he is the chairman of the steering committee.

The steering committee advises and supports the planning and implementing of

² Cuba, E.G. & Lincoln, Y.S. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.

Figure 1. Implementation of the evaluation.



the evaluation process, offers viewpoints and concrete expertise during the process, comments on and formulates themes and questions for the self-evaluation. The project manager is responsible for presenting issues to the steering committee to discuss and the project planning officer is the secretary of the meetings. The members of the steering group are as follows: Seppo Ikäheimo, Professor, Aalto School of Economics; Marjo-Riitta Järvinen, PhD., Quality Manager, Lahti University of Applied Sciences; Teemu Leinonen, Professor, Aalto School of Art and Design; Lauri Malmi, Professor, Aalto School of Science; Risto Nieminen, Professor, Aalto School of Science; Tuija Nikko, Ph.D., Dir. of Quality and Accreditation, Aalto School of Economics; Janne Peltola, student, Aalto University Student Union; Seppo Saari, Adjunct Professor, Project Manager, University of Helsinki; Ari Sihvola, Professor, Aalto School of Electrical Engineering; Jukka Tuhkuri, Professor, Aalto School of Engineering.

Each Aalto University School has nominated a co-ordinator for the evaluation. Their task is to ensure the flow of information to the degree programme leaders and between the School and the evaluation project team. The coordinator can organise events and activities that support the programme leaders during the self-evaluation stage. The coordinator ensures that the self-evaluation reports are sent to the evaluation project team by the deadline. The coordinator participates in the organising of the panel site during the week of the visit. The coordinators at Aalto Schools are as follows: Iina Ekholm, Aalto School of Art and Design; Reija Jokela, Aalto School of Chemical Technology; Kirsti Keltikangas, Aalto School of Electrical Engineering; Mari Knuuttila, Aalto School of Science; Tuija Nikko, Aalto School of Economics; Ritva Viero, Aalto School of Engineering.

The practical implementation is coordinated and managed by the Evaluation Project Team³ which is part of the unit for Strategic Support for Research and Education. The team outlines the timetable and deadlines, compiles all guidelines and the supplementary documentation, prepares steering committee meetings, gives support to the coordinators and degree programmes during the self-evaluation stage, organises the invitations of the panellists and their site visit, collects the evaluation documents into a publication and communicates the results to degree programme leaders and the Aalto leadership. The project team collaborates with educational developers and representatives of the faculty and administration to include different points of view and experiences to make the evaluation a beneficial exercise. The project team also plans and carries out a student feedback survey in collaboration with Aalto University Student Union members. Feedback will be collected from students who began their studies in 2006 and 2007.

The Project Team will either obtain or compile the following supporting documents for the panels:

- Aalto University information leaflet describing the University, its mission, goals, structure etc. (from the Aalto University Communications units)
- Description of the Finnish higher education system (from the Ministry of Education and Culture)
- Aalto School brochures (each six Schools compile their own): a description of their structure (departments, degree programmes), the core studies provided for degree programmes, the committees and boards involved in the decision making of educational issues, policies concerning planning and implementing programmes, educational development activities, quality assurance work)
- Statistical data – compiled by the Project Team from various sources)
- Student feedback survey report (Project Team)
- English abstracts of the quality assurance audit reports (from FINHEEC)

³ Project Manager, Dr. Lena Levander, Project Planning Officer, M.Soc.Sci Reetta Koivisto.
Contact: evaluation@aalto.fi

Table 1. Timetable and division of tasks.

	Project team	Schools	Programmes
August - September 2010	Project planning. Preparation of evaluation instructions, recruiting School-specific co-ordinators.	Nominations of School-specific co-ordinators. Suggestions for panel members.	
October 2010	Evaluation instructions finalised. Events for informing people about the TEE.		
November - December 2010	Finalising the panel compositions. Compiling background and support material. Workshops for the programme leaders to support the facilitation of self-evaluation discussions. Student survey planning.	Organisation of events to inform everyone about the evaluation. Schools make suggestions for the programmes to be evaluated.	Participation in the information events. Participation in workshops organised by the project team. Planning the timetable and organisation for the self-evaluation process. Self-evaluation discussions carried out.
January 2011	Preparations for the panel visit. Compilation of supporting materials and documents. Report on student feedback survey compiled.	Brochures/ leaflets/ descriptions of the Schools.	Self-evaluations continue. Submission of self-evaluation document by end of January.
February 2011	Self-evaluation reports and supporting material sent to the panel members. Student guides for the panels recruited.	Nomination of persons and groups who will be interviewed during the panel visit.	Nomination of persons who will be interviewed during the panel visit.
March 2011	Finalising the programme for panel visits. Pre-site visit -meeting (web based) for the panel members/chairs.		
April 2011, week 15	Coordination of the site visits. Support for the panel members.	Schools inform their staff and students about the panel visit. Coordinators involved in the panel visit organisation and during the week.	Programme leaders prepare for panel visit week.
May 2011, week 19	Panel feedback and recommendations sent by panel chairs.		Checking feedback reports for misunderstandings/ mistakes.

June 2011	Compiling final report, language revision.		
July – August 2011	Final report printed		
Academic year 2011- 2012	Evaluation results are available for discussions, utilization and actions.	Making use of the recommendations and feedback.	Making use of the recommendations and feedback.

Self-evaluation

The main task is to evaluate the practices of planning, management, implementation and development of undergraduate and graduate degree programmes. Moreover, the those involved in degree programmes are asked to review their present stage concerning the development areas of teaching and learning outlined by Aalto University's strategy <http://www.aalto.fi/fi/about/strategy/>. This review is carried out in order to refocus the current development areas for the next strategy.

In principle, all Bachelor's and Master's degree programmes that have graduated students are evaluated. As there is a wide number of and variation in the degree programmes at each School, it is necessary to outline some guidelines to decide which programmes are going to be evaluated. Each School makes suggestions according to the following principles:

- Programmes that have started recently and have no graduates yet, and programmes that are discontinued are not evaluated;
- Bachelor's and Master's stages are considered as an entity in most cases; however, they can be evaluated separately, especially if their learning goals are very different;
- When there are different programme leaders for the Bachelor's and Master's degree programmes but the degree is considered a single entity, it is recommended that the programme leaders write a joint report. The same recommendation applies to programmes where the structure and content is the same but they are taught both in Finnish and English;
- Schools do not have to evaluate international Bachelor's or Master's programmes if the number of participants is small and the students have yet to graduate;
- If a degree programme is not evaluated, a reason has to be stated.

The list of programmes included in the evaluation is compiled by the relevant School Coordinator and it has to be accepted by the Dean or Vice Dean and the Head of Academic Affairs of that School. The final decision is made by the Vice President, Martti Raevaara.

The self-evaluation stage can be implemented in many alternative ways and the degree programme leaders can decide the best way for their context. School specific situations can be taken into account and the self-evaluation implementation can be

flexible. However, as the idea is to support the development of the degree programme, wide participation and collaboration by staff and students is recommended during the self-evaluation stage. The responsibility for the degree programme evaluation and the compilation of the document lies with the programme leader. The description of the organisation of the self-evaluation and the method for compiling the report is included in the self-evaluation report. Degree programme leaders are encouraged to organise workshops and discussions in order to formulate the response to the self-evaluation issues. These events can be organised, for example, two or three times and should last approximately two hours. The self-evaluation process is also a valuable opportunity to update the quality assurance work and it is recommended that all existing material is utilised and that all material produced is saved for future use. Based on the joint discussions, a self-evaluation report (in English) is formulated and sent to the evaluation project team (an electronic form will be provided) by 31st January 2011 (evaluation@aalto.fi).

The Evaluation Project Team offers support in the form of discussion sessions and workshops at the start of the self-evaluation stage. The discussion sessions are organised at all Schools for those involved and interested in the evaluation. Several optional workshops are organised for programme leaders and the School specific coordinators. During the workshops programme leaders can familiarise themselves with the self-evaluation questions and work out a plan for conducting a self-evaluation process within their own programme.

The self-evaluation report is the most important document that will be given to the panellists. Therefore, it is extremely important to provide a realistic picture by reporting both achievements and weaknesses in teaching and education. There is a limit to the number of pages and attachments and references to web pages that can be made. Moreover, the panellists may not have time to acquaint themselves with additional material.

Structure of the self-evaluation report

The report is compiled on the basis of the responses to the evaluation questions produced during the joint discussions within the degree programme. The report includes the following chapters:

Chapter 1:

General description of the degree programme and programme goals (600–800 words). This includes visions of the future competences the graduates will acquire, connections to the departments that jointly produce the degree programme, if applicable, any special features of the programme, and connections to the departments that provide the core studies (service teaching). In addition, previous degree programme evaluations, results, and the action taken as well as follow-up procedures are included.

The funding and decision making about the funds allocated for the teaching in the programme are also described.

Chapter 2:

How the self-evaluation was implemented (events/functions arranged, materials and documents gathered), how the report was compiled and the participants involved (250–350 words).

Chapter 3:

Self-evaluation of the degree programme as outlined (400–500 words per question, see Appendix 1. Note: one question can contain several sub-questions).

Chapter 4:

The degree programme reviews the present situation regarding the development areas of Aalto University's strategy for teaching and learning (shown as a matrix with spaces).

Chapter 5:

The possibility to include information that the guiding questions have not addressed (about 400-500 words).

Chapter 6:

Feedback on the evaluation process so far (400–500 words).

Appendices:

Additional information can be included in a maximum of six appendices of no more than twelve pages.

The self-evaluation questions are in Appendix 1 (1a in English (the translation will be available by December 2010), 1b in Finnish).

An electronic form will be provided by the project team for the return of the self-evaluation report.

External evaluation, site visit week, feedback and final report

The external evaluation will be conducted by international expert Panels appointed by Aalto University. There will be six Panels, one for each Aalto School. Each Panel will have a Finnish academic member, who will also ensure that the Finnish higher education system is understood correctly by the Panel. There will also be a student representative on each Panel. The principles for the composition of the Panels are these: expertise in one of the subject areas of the respective Aalto School, wide-ranging teaching and pedagogical experience, evaluation experience and interest in educational development. The Schools, steering committee members and educational developers were asked to propose experts for the Panels. The steering committee decided on the preferences for the Panel chairpersons and other members according to the criteria set above. The Panel members are nominated by the President of Aalto University after the consent of the nominee.

The Panel members will meet in March during a web-based seminar to discuss the evaluation task. The Panels will visit the Schools from 10 to 15 April 2011. The purpose of the visit is to verify and supplement the information given in the self-evaluation reports.

The site visit week begins with a joint meeting of the Panel members. During the week, the Panels will be interviewing different groups and programme leaders, teaching staff, students, and alumni as well as employers' representatives. At the end of the site visit week, the Panels will hold a briefing on the tentative results of the evaluation and hand in their preliminary reports. A more detailed programme for the site visit week will be published in February or March 2011. The Panels will deliver the final evaluation

reports to the evaluation Project Team by mid-May. Degree programme leaders will then have the opportunity to check the reports for any misunderstandings.

The final report of the TEE evaluation will be compiled in June and the publication will be made available in August.

Consequences of the evaluation results

The aim of the evaluation is to analyse the present state of some of the practices of the degree programme management, implementation and development. There are several expected benefits to be gained from the evaluation process. The degree programmes and departments can make immediate use of the findings during the self-evaluation stage to update or renew their procedures. They will also receive useful feedback and recommendations from international colleagues as well as their students. The process will create ideas to improve the quality of the degree programmes, thereby leading to enhanced learning. As degree programmes analyse and record their strengths in teaching, it acknowledges good teaching and enhances the sharing of innovative teaching practices. The process of analysis will also help to identify and formulate educational development focus areas.

The feedback and recommendations report from the panels will be analysed and conclusions drawn for action in autumn 2011. The leadership of Aalto University will discuss with each School's leadership and degree programme leaders the need for development resources during the academic year 2012-2013. The outcome and feedback also provide information for the annual planning process and are the basis for the strategic discussions between the University's leadership and the individual Schools for the 2012-2013 academic year.

Appendices

Appendix 1a: Self-evaluation questions in English

[Self-evaluation questions, see Appendix B3 in this report.]

Appendix 1b: Self-evaluation questions in Finnish

[Omitted from this report.]

Appendix 2: Glossary, English-Finnish

This short glossary should help with some of the specific terms used in the instructions and questions. It is not exhaustive.

- Advice, academic advice, study guidance: opintoneuvonta, opinto-ohjaus esim. opintojen rakenteeseen, korvaavuuksiin, kurssijärjestelyihin, valintoihin, opintohallinnollisiin menettelyihin ym.
- Assessment: opiskelijan suorituksen arviointi, numeerinen ja summatiivinen arvostelu yleensä.
- Blended learning: sulautettu opetus eli tieto- ja viestintätekniikka integroituu opetukseen.
- Counselling (or guidance), study/educational guidance/counselling: ohjaus, opintojen/opiskelun ohjaus, kohdistuu opintojen suunnitteluun (HOPS, ainevalinnat, kurssivalinnat), mutta on enemmän henkilökohtaisiin ominaisuuksiin,

vahvuuksiin ja valintoihin liittyvää keskustelua, ei ole yleensä yhtä oikeaa vastausta. Learning guidance, counselling: oppimisen ohjaus, kohdistuu lähinnä opiskeltaviin sisältöihin ja opiskelutapoihin.

- Credit unit (ECTS European Credit Transfer System): opintopiste
- Course: opintojakso, kurssi (kokonaisuus)
- Course design: kurssin/opintojakson suunnittelu
- Curriculum: opetussuunnitelma
- Degree requirements: tutkintovaatimukset
- Degree regulations: tutkintosääntö
- Degree programme: koulutusohjelma, tutkinto-ohjelma – johtaa tutkintoon
- Degree programme leader/director/responsible professor: koulutusohjelmasta vastaava professori, koulutusohjelman johtaja, koulutusohjelmavastaava
- Diverse learners/students with diverse needs or learning disabilities, accessibility: erilaiset oppijat, oppimisvaikeuksia tai erilaisia oppimistyytlejä
- Educational development: opetuksen kehittäminen
- Evaluation: laadullinen, formatiivinen, kehittävä ja palautteen antamiseen perustuva arviointi
- Finnish Higher Education Evaluation Council FINHEEC: Korkeakoulujen arviointineuvosto
- Learning skills, study skills: opiskelutaidot; oman toiminnan suunnittelu ja arviointi, opiskelustrategioihin ja -menetelmiin liittyvät taidot
- Lifelong learning, skills: elinikäisen oppimisen taitoja ovat esim. tiedon hankkiminen ja sen luotettavuuden arviointi, oman toiminnan ja osaamisen arvioiminen ja kehittäminen, yhteistyö ja -vuorovaikutustaidot monialaisissa verkostoissa ym.
- Personal/individual learning plan: HOPS eli henkilökohtainen opintosuunnitelma
- Core studies/modules: perusopinnot
- Study module: opintokokonaisuus
- Study time: mitoitus eli oikean aikamäärän varaaminen opiskelijan oppimista varten
- Supervision: opinnäytetyön ohjaus yleensä (voi tarkoittaa myös opinnäytetyön valvojaa ja ohjaaja on tällöin instructor)
- Workload: opiskelijan kokemus opintojen kuormittavuudesta
- Work placement: harjoittelu
- Quality assurance system: laadunvarmistusjärjestelmä

The following sources have been consulted for the glossary:

<http://mot.kielikone.fi/mot/valter/netmot.exe?UI=fiva2&height=162>

<http://fi.wikipedia.org/wiki/K%C3%A4ytt%C3%A4j%C3%A4:Tarmo/Oppisanasto>

Lindblom-Ylänne, Sari ja Nevgi, Anne (toim.). 2009. Yliopisto-opettajan käsikirja. Helsinki: WSOYpro.

Appendix B3. Questions for the Self-Evaluation

More detailed instructions are provided in Chapters 4-5 of the Instructions for Self-Evaluation. An English version of the final self-evaluation report will be drawn up on an online form provided by the project team. More information about submitting the report will be available later. Note that links to websites may be included; however, avoid making the report excessively complicated to read.

We recommend that the assessment discussion concerning the self-evaluation questions involves an extensive number of teaching staff and students who take part in producing the degree programme. If any question seems unclear, please send your query or feedback by email to evaluation@aalto.fi.

Chapter 1

Briefly describe your degree programme and your view of future competence requirements within the field. Describe the way you co-operate, if the degree programme is co-produced by several departments. Also describe your cooperation with the departments providing basic education. Describe previous evaluations, results, measures and follow-up.

This chapter also describes the funding available for the teaching offered by the degree programme. How much is available for teaching, which instance provides it and who decides on its use? How does the degree programme negotiate the required resources with the departments providing teaching? What challenges have the resource practices posed? What would be a good model for providing resources for the degree programme? (600–800 words).

Chapter 2

Describe how the self-evaluation stage was prepared and implemented. Provide examples of arranged events and their participants as well as the way the self-evaluation report was drawn up. (250–350 words).

Chapter 3

Describe and evaluate the planning and management, implementation, and development of the degree programme. The chapter is divided into three main themes (degree programme planning and management, implementation, and evaluation and development) and relating sub-themes. Examination is steered through five further subtheme questions for analysing the degree programme. (400–500 words a-e altogether).

The questions **mainly** comply with the following structure:

- a) Description of the objectives (some of the questions may deviate from this)
- b) Description of the procedures
- c) Assessing the success rate on a scale of 1–4 (1=absent/poor, 2=emerging, 3=good, 4=excellent)⁷, i.e. numerical success rate.

⁷ Applying a similar scale as in the quality assurance system audits.

- d) What is good and functional? Provide 1–2 good examples. Qualitative success.
- e) What are the perceived problem areas and challenges? What measures have been planned or implemented to address these?

Degree Programme Planning and Management

Degree Programme Management

- 1a) What is the role, responsibility and decision-making power of the Head of the Degree Programme/Co-ordinating professor/Degree Programme Co-ordinator?
- 1b) What are the main management procedures of the degree programme?
- 1c) Estimate on a scale of 1-4 how well the management procedures of the degree programme support the achievement of the degree programme's objectives: 1_2_3_4_
- 1d) What are your particular areas of success?
- 1e) What challenges and problems are involved in the management of the degree programme? What are the planned or implemented measures to address these?

Connection between Research and/or Artistic Activity and Teaching

- 2a) What are your objectives in connecting research and/or artistic activity and teaching?
- 2b) Which pedagogical methods are used for building the connection between research and/or artistic activity and teaching?
- 2c) Estimate on a scale of 1-4 the success rate for connecting research and/or artistic activity with teaching: 1_2_3_4_
- 2d) Describe an example of succeeding in connecting research and/or artistic activity with teaching.
- 2e) What problems have you perceived? What are the planned or implemented measures to address these?

Defining the Degree Programme Outcomes

- 3a) What are the main educational outcomes of the degree programme and how have you concluded them? What type of competence is required from degree programme graduates?
- 3b) What are the procedures for updating and drawing up the outcomes and competences of the degree programme as a whole? Who are involved in this process?
- 3c) Estimate on a scale of 1-4 the success rate for drawing up the outcomes: 1_2_3_4_
- 3d) How has the procedure of defining the programme outcomes succeeded and how was this achieved?
- 3e) What are the perceived problem areas? What are the planned or implemented measures to address these?

Linking the Learning Outcomes of Courses and Modules

- 4a) How are the intended learning outcomes of individual courses and modules linked to the intended learning outcomes of the degree programme's other courses and modules? (Please describe these only on a general level.)
- 4b) What are the planned procedures for linking the individual elements to the whole?
- 4c) Estimate on a scale of 1-4 the success rate for linking the intended learning outcomes of different courses and modules to the learning outcomes of the degree programme

as a whole: 1_2_3_4_

- 4d) Provide an example of succeeding in an activity for planning, synchronising and implementing course learning outcomes included in the degree programme in an integrated manner.
- 4e) What are the perceived problem areas? What are the planned or implemented measures to address these?

Supporting the Competence Development and Professional Development of Students (e.g. personal study plan, optional studies, tutoring, portfolio work, workplace connections, career advice, mentoring)

- 5a) What goals have been set to support the competence and professional development of students?
- 5b) How is the competence and professional development of students supported and monitored as the studies progress?
- 5c) Estimate on a scale of 1-4 the success rate for supporting and monitoring the competence development of students: 1_2_3_4_
- 5d) Provide an example of students successfully being able to monitor their own competence development and the type of support they receive for the purpose.
- 5e) What are the perceived problem areas regarding the progress of studies and as skills develop during the degree programme? What are the planned or implemented measures to address these?

Study Time Allocation and Workload of the Degree Programme

- 6a) How is an excessive study workload avoided?
- 6b) What methods are used to find out that the allocation of study time and the experienced student workload is appropriate both in the whole degree programme and in its parts ?
- 6c) Estimate on a scale of 1-4 the success rate of the study time allocation: 1_2_3_4_
- 6d) Please provide an example of successful study time allocation and rectification of problems.
- 6e) Which problem areas require further attention? What are the plans for correcting the problems?

Flexibility of Studies, Opportunities for Domestic and International Mobility

- 7a) What are the aims for internal (between the Aalto University Schools and programmes), domestic and international mobility?
- 7b) Which methods and structures support the implementation of mobility (e.g. the structure of the curriculum, substitution of studies and credit transfer)?
- 7c) Estimate on a scale of 1-4 student mobility opportunities provided by the degree programme: 1_2_3_4_
- 7d) Which solutions are particularly successful in supporting mobility?
- 7e) What are the perceived problem areas? What are the planned or implemented measures to address these?
- 8) Examine questions 1-7 (Degree Programme Planning and Management) and your answers, paying particular attention to factors that prevent or hinder finding solutions to the problem areas of the theme (e.g. internal structures or procedures regarding the degree programme, department, school or university)?

Implementing Teaching of the Degree Programme Courses and Modules

Basic Studies (Studies and teaching at the beginning of the programme)

- 9a) What are the goals for the basic studies included in the degree programme?
What knowledge and skills must be achieved in basic studies outside the degree programme (e.g. Mathematics, computer science, statistics, chemistry, physics, languages, communications, art studies, etc.)?
- 9b) Which procedures ensure that the basic studies are relevant and support the achievement of the degree programme outcomes?
- 9c) Estimate on a scale of 1-4 the success rate of basic studies supporting learning among students as the studies progress: 1_2_3_4_
- 9d) Describe an example of successfully integrated basic studies in degree programme education.
- 9e) Which problem areas relating to the basic studies remain unsolved? What are the planned or implemented measures to address these?

Student guidance and counselling, tutoring (e.g. receiving new students, orientation, study progress, choosing courses, choosing a major, personal study plan, work placement, administrative procedures relating to theses, etc.)

- 10a) What are the goals for student guidance and counselling at different stages of the study path?
- 10b) How are students guided at different stages of the programme, in completing assignments and in decision-making?
- 10c) Estimate on a scale of 1-4 the success rate of students receiving guidance for studies and their planning in a comprehensive and adequate manner: 1_2_3_4_
- 10d) Describe a successful study guidance method.
- 10e) What are the perceived problem areas and the planned or implemented measures to address these?

Support for Learning and Providing Feedback (Support for learning and feedback for theses, assignments and courses)

- 11a) What are the aims of the degree programme for supporting learning?
- 11b) Describe different guidance methods and procedures. How is learning supported and evaluated in connection with e.g. assignments?
- 11c) Estimate on a scale of 1-4 the success rate for supporting learning 1_2_3_4_
- 11d) Which methods have proven successful for supporting learning and giving feedback?
- 11e) What are the problems in developing and adequately arranging support and opportunities to provide feedback? What are the plans for developing support for learning?

Teaching Methods

- 12a) What are the aims for using and developing teaching methods and pedagogical approaches?
- 12b) What teaching methods and pedagogical solutions have been used, what are the reasons for using them and to what extent are the different methods used?

- 12c) Estimate on a scale of 1-4 the suitability of the used teaching methods and pedagogical solutions in relation to the aims 1_2_3_4_
- 12d) Provide an example of the teaching methods and pedagogical solutions successfully supporting the attainment of the learning outcomes that you have defined.
- 12e) What are the perceived problem areas and challenges? What are the planned or implemented measures to address these?

Methods for evaluating learning (Written examination, examination using one's own materials, online examinations, essays, projects and related documentation, productions, learning diaries, oral examinations, assignments, self-evaluation, peer evaluation, etc.)

- 13a) What are the goals for evaluating and assessing learning?
- 13b) Describe the different learning evaluation methods that have been used, what are the arguments for their use and to which extent are they used?
- 13c) Estimate on a scale of 1-4 the success rate of the used evaluation methods in generating information for teachers and students on the attainment of the learning outcomes: 1_2_3_4_
- 13d) How have the methods for evaluating learning and practices been developed? What is good about the learning evaluation practices of the degree programme?
- 13e) What are the challenges and problems in the evaluation of learning? What are the plans for developing evaluation methods within the degree programme?

Feedback on Learning/Completed Studies

- 14a) What feedback is provided to students on their learning in addition to the grade?
- 14b) What procedures provide students with feedback on learning?
- 14c) Estimate on a scale of 1-4 the success rate of providing feedback in practice: 1_2_3_4_
- 14d) Describe a particularly successful feedback method for students:
- 14e) What are the problems and challenges in providing feedback? How have the feedback methods been developed or how are they planned to be developed?

Teaching Resources (Staff resources, teaching rooms and other premises, labs, tools, equipment, studios, ICT facilities and software, libraries, etc.)

- 15a) Describe the necessary resources that ensure a good standard of teaching.
- 15b) Describe the resources available for teaching, their suitability and whether they can be used as needed?
- 15c) Estimate on a scale of 1-4 the current status of resources: 1_2_3_4_
- 15d) What are you satisfied with?
- 15e) What are the problems or challenges of the available resources?
- 16) Examine questions 9-15 (Implementing Teaching of the Degree Programme) and your answers, paying particular attention to factors that prevent or hinder finding solutions to the problem areas of the theme (e.g. internal structures or procedures regarding the degree programme, department, school or university)?

Degree Programme Evaluation and Development

Utilisation and Impact of Student Feedback

- 17a) What are the aims for collecting student feedback?
- 17b) How is student feedback collected, processed and utilised, and how is the impact of the implemented measures monitored?
- 17c) Estimate on a scale of 1-4 the extent of implemented development measures on the basis of student feedback: 1_2_3_4_
- 17d) Describe a successful method for collecting, processing and utilising feedback.
- 17e) What are the challenges and problems in utilising student feedback?

Utilisation of Workplace and Stakeholder Feedback

- 18a) What is the aim for collecting workplace and stakeholder feedback?
- 18b) How is feedback from former students, employers and stakeholders collected or received and utilised?
- 18c) Estimate on a scale of 1-4 the success rate in utilising workplace and stakeholder feedback: 1_2_3_4_
- 18d) Provide an example of the impact of workplace and stakeholder feedback on developing the degree programme. What utilisation methods for workplace and stakeholder feedback have been developed?
- 18e) What are the main challenges and problems in collecting and utilising workplace and stakeholder feedback?

Cooperation among Teachers

- 19a) What are the goals for cooperation among teachers in planning, implementing and developing teaching?
- 19b) How do teachers cooperate during the planning, implementation and evaluation processes of the courses?
- 19c) Estimate on a scale of 1-4 how the afore-mentioned cooperation is carried out in the degree programme: 1_2_3_4_
- 19d) Provide an example of a cooperation method you have developed.
- 19e) What are the perceived problems and challenges? What are the planned or implemented measures to address these?

Pedagogical Competence

- 20a) What are aims for the pedagogical competence of the teaching staff?
- 20b) How has teaching staff developed its pedagogical competence and how does the degree programme support teachers in developing their pedagogical competence?
- 20c) Estimate on a scale of 1-4 the quality of the pedagogical competence of the teaching staff: 1_2_3_4_
- 20d) Provide an example of a situation or course which has demonstrated that the teacher has a good level of pedagogical competence.
- 20e) What are the challenges and problems in developing the pedagogical competence of teaching staff?

Utilisation of Research on Learning, Teaching and Educational Development (General or discipline-specific university pedagogy, information and communication technology (ICT), learning sciences, education, educational psychology, organisational psychology, work psychology, cognitive sciences, neuroscience, art pedagogy, expertise research, etc.)

- 21a) What are the aims for utilising research findings on learning, teaching and educational development to enhance the quality of teaching?
- 21b) How has research findings been utilised and what impact has it had on the development of the quality of teaching?
- 21c) Estimate on a scale of 1-4 how much research on learning and educational development is used to develop teaching: 1_2_3_4_
- 21d) What studies or investigations have been conducted within the degree programme to develop teaching and learning? You can also provide an example of successfully utilising research on learning, teaching and educational development.
- 21e) What are the challenges and problems in utilising research findings on learning, teaching and educational development?
- 22) Examine questions 17–21 (Degree Programme Evaluation and Development) and your answers, paying particular attention to factors that prevent or hinder finding solutions to the problem areas of the theme (e.g. internal structures or procedures regarding the degree programme, department, school or university)?

Chapter 4

Assess the current status of the degree programme in relation to the areas of development presented in Aalto University's Strategy.

Teaching and learning development areas of Aalto University's Strategy, <http://www.aalto.fi/fi/about/strategy/> (1.11.2010)

The main development areas presented in the Strategy are these:

1. Student-teacher ratio and student guidance
2. Creating a learning-centred culture and teaching methods
3. Building teaching and academic leadership
4. Assessing the quality of teaching and learning
5. Merging research, art and pedagogy in academic activities

The development areas are included in the matrix below, and each area is divided into more specific subsections in line with the Strategy. Estimate the level of your degree programme on the assessment scale, tick the appropriate option box and provide reasons for your choice (max 40 words). If you think that a certain area cannot be developed or decided upon within the degree program, please enter your comment in the first box of the matrix.

The quotes are from the Strategy; some sections include the [degree programme] in brackets.

Assessment scale

Poor: Early stages or measures have not yet been taken.

Emerging: The issue has been discussed and concrete plans exist.

Good: Already implemented.

Excellent: Implemented and developed further.

Development Areas

1. Student-teacher ratio and student guidance

	Degree programme not responsible	Poor	Emerging	Good	Excellent
"-Group sizes decreased significantly by involving all researchers in teaching, by recruiting more academic staff and by decreasing student admission numbers."					
"-The personal guidance of students is made an integral part of their studies."					

2. Creating learning-centred culture and teaching methods

	Degree programme not responsible	Poor	Emerging	Good	Excellent
"-A learning-centered culture challenges teachers and researchers to readdress their teaching methods, improve their performance in mentoring students as well as strengthen the link between education and research."					
"-Students are guided towards a strong commitment to their studies and to taking responsibility for their own development."					
"- The University [degree programme] is a true learning community and its environment encourages and inspires the active development of new ways of learning and building expertise."					
"- Aalto University [the degree programme] develops a multitude of learning and teaching methods tailored to the needs of students' varying capacities and styles of learning to increase the efficacy of their studies."					

<p>“-Resources are invested in information and communications technology as applied in education. Key applications in this sector are the networking of Aalto University’s different campuses, the sharing of curricula, as well as international educational cooperation.”</p>					
<p>“-Blended learning, and the production and open sharing of teaching and learning materials will become key aspects of the learning community’s operations.”</p>					

3. Building teaching and academic leadership

	Degree programme not responsible	Poor	Emerging	Good	Excellent
<p>“- A high standard of education and skilled teachers are pivotal to the University’s [degree programme’s] central strength.”</p>					
<p>“-Greater emphasis will be placed on teaching merits for recruitment, and initiatives towards better teaching approaches and methodologies will be supported.”</p>					
<p>“-Pedagogical training and expertise will be coupled to the career development systems.”</p>					
<p>“-The significance of educational leadership is recognized.”</p>					
<p>“-The expertise and research of the University’s [degree programme’s] own departments and schools form the basis for the development work.”</p>					

4. Assessing the quality of teaching and learning

	Degree programme not responsible	Poor	Emerging	Good	Excellent
"-The quality of learning, teaching and educational processes will be assessed systematically and the assessment data used as the foundation for further development."					
"-The learning community is encouraged to interact continuously and to achieve better results through the development of a culture of receiving and giving feedback."					
"-The quality and feedback systems for teaching are constructed to support students' learning and to ease teachers' work in order to increase quality."					
"- The University [degree programme] will also constantly assess and develop student admission procedures, especially in order to ensure study motivation."					
"- Aalto University [the degree programme] has an inspiring, high-quality culture that supports continuous learning."					

5. Merging research, art and pedagogy in academic activities

	Degree programme not responsible	Poor	Emerging	Good	Excellent
<p>“-Artistic activities can highlight problems which are often solved through a multidisciplinary combination of scientific and artistic cooperation.”</p>					
<p>“-Our goal is to create a place and the context in which art and science meet and in which societal issues are tackled through a comprehensive research approach.”</p>					
<p>“- The Aalto University [degree programme] community will make it possible for science and art to meet, and to collaborate, starting from the basic principles of each discipline.”</p>					

Chapter 5

Opportunity to explain something about the degree programme, which was not possible in the guided part of the self-evaluation. (400–500 words).

Chapter 6

You can provide feedback on the implementation of the evaluation so far: e.g. timetable, communications, instructions, self-evaluation questions, support for self-evaluation (information events, workshops and responding to queries), implementing the self-evaluation, informing about the consequences of the evaluation, the development areas of learning and teaching within Aalto University’s Strategy. You can also provide suggestions for developing the evaluation of teaching. (400–500 words).

Appendices

Further clarifications can be attached with a total of no more than 12 pages. Please mark the appendices clearly with numbers and refer to them within the text. Links to websites may be included, however, avoid making the report excessively complicated to read.

Appendix B4. Degree Programmes that were evaluated

School of Art and Design

- Film and Television BA+MA
- Design for Theatre, Film and Television BA+MA
- Graphic Design BA+MA
- Photography BA+MA
- New Media MA + Sound in New Media
- Ceramic and Glass Design BA + Applied Art and Design MA
- Interior Architecture and Furniture Design BA + Spatial Design MA + Furniture Design MA
- Textile Art and Design BA+MA
- Industrial and Strategic Design BA+MA
- Fashion and Clothing Design BA+MA
- Master's Degree Programme in Creative Business Management + Visual Culture MA
- Art Education
- Master's Degree programme in ePedagogy Design
- Fine Arts MA
- Environmental Art MA

School of Chemical Technology

- Chemical Technology
- Material Science and Engineering

School of Economics

Bachelor's degree programmes:

- Business Technology
- International Business, BScBA (Mikkeli)
- Management
- Economics
- Marketing
- Accounting, Finance and Business Law

Master's degree programmes:

- Information and Service Management
- Management
- Finance
- International Business (Helsinki)
- International Business Communication

- Accounting
- Marketing
- Communication in Business and Economy
- Economics
- Entrepreneurship
- Business Law

School of Electrical Engineering

- Automation and Systems Technology
- Bioinformation Technology
- Electronics and Electrical Engineering
- Communications Engineering and the following international Master's programmes (integrated in the above degree programmes)

Master's Programme in

Communications Engineering

Master's Programme in Electrical Engineering

Master's Programme in Micro and Nanotechnology

School of Engineering

- Architecture
- Landscape Architecture
- Energy and HVAC-Technology
- Mechanical Engineering
- Geomatics
- Real Estate Economics
- Master's programme in Real Estate Investment and Finance
- Structural Engineering and Building Technology
- Transportation and Environmental Engineering
- Master's programme in Environmental Engineering (Lahti Centre)

School of Science

- Information Networks
- Engineering Physics and Mathematics
- Computer Science and Engineering (incl. following Master's programmes)

Master's Programme in Mobile Computing - Services and Security

Master's Programme in Foundations of Advanced Computing

Master's Programme in Machine Learning and Data Mining

Master's Programme in Service Design and Engineering

Master's Programme in Bioinformatics

• Industrial Engineering and Management (incl. following Master's programmes)

Master's Programme in Service Management and Engineering

Master's Programme in Strategy

Appendix B5. Composition of the Panels

School of Art and Design

Chair: Prof. Ellen Hazelkorn, Dublin Institute of Technology

Prof. Michal Bregant, Film and Television Academy of Prague

Dean of the Graduate School of Art & Economics Marjolijn Brussaard, Utrecht School of the Arts

Associate Prof. Ingelise Flensburg, The Danish School of Education

Senior Policy Developer Yolande van Kessel, Design Academy Eindhoven

Prof. Les Mitchell, Edinburgh College of Art

Finnish Member: Prof. Soili Hämäläinen, Theatre Academy Helsinki

Finnish Student Member: Riikka Pellinen, Sibelius Academy

School of Chemical Technology

Chair: Prof. Egon Moesby, Aalborg University

Prof. Claes Niklasson, Chalmers University of Technology

Prof. Seshadri Seetharaman, KTH Royal Institute of Technology

Finnish Member: Prof. Jan Lundell, University of Jyväskylä

Finnish Student Member: Nadja Kiiskinen, Tampere University of Technology

School of Economics

Chair: Prof. Dorte Salskov-Iversen, Copenhagen Business School

Prof. Mike Clements, Staffordshire University, Business School

Prof. Theo P.W.M. van der Krogt, University of Twente

Lecturer Constance Lütolf-Carroll, ESADE Business School

Head of Teaching and Learning, Berry O'Donovan, Oxford Brookes University Business School

Lecturer Simon Sweeney, The York Management School, University of York

Prof. Philip Vergauwen, Maastricht University

Finnish Member: Prof. Arja Ropo, Tampere Business School

Finnish Student Member: Ilkka Marja-Aho, University of Turku, Turku School of Economics

School of Engineering

Chair: Prof. Anders Eriksson, KTH Royal Institute of Technology

Prof. Gernot Beer, Technical University Graz

Prof. Béla Márkus, The University of West Hungary

Prof. Mark Michaeli, Technical University Munich

Mr Eric Parry RA, Architect, Formerly University of Cambridge

Finnish Member: Dr Juha Jaako, University of Oulu

Finnish Student Member: Tanja Blom
Tampere University of Technology

School of Science

Chair: Vice-Rector, Prof. Eva Åkesson, Lund University

Senior Lecturer Anders Berglund, Uppsala University

Dr Robin Clark, Aston University

Prof. Erik V. Thomsen, Technical University of Denmark

Finnish Member: Prof. Harri Haapasalo, University of Oulu

Finnish Student Member: Juuso Kuusinen,
Tampere University of Technology

School of Electrical Engineering

Chair: Prof. Ole Ravn, Technical University of Denmark

Lecturer Kristina Edström, KTH Royal Institute of Technology

Prof. Jens Hauelsen, Technical University of Ilmenau

Prof. Daniel Sjöberg, Lund University

Finnish Member: Prof. Timo Vekara,
University of Vaasa

Finnish Student Member: Janne Rossi,
Lappeenranta University of Technology

Appendix B6. Timeframe for the Panels' Site Visit Week

TEE 2010-2011

Framework for the site visit week, will be adjusted for each panel

Sunday 10.4.	Monday 11.4.	Tuesday 12.4.	Wednesday 13.4.	Thursday 14.4.	Friday 15.4.
	Dpt hotel 8:30	Dpt hotel 8:15	Dpt hotel 8:15	Dpt hotel 8:15	Dpt hotel 8:30
	Introduction session 9:00-10:30 Dipoli	Interview sessions 9:00-12:00	Interview sessions 9:00-12:00	Interview session 9:00-12:00	Writing reports 9:00-11:30
	Panel Meetings 10:30-12:00 Dipoli				
	Lunch 12:00-13:00	Working Lunch	Working Lunch	Working Lunch	Lunch at 12:00
Arrivals	Interview sessions at Schools 14:00-15:30 Deans/vice deans+Heads AA	Interview sessions 13:30-16:30	Interview sessions 13:30-17:30	Interview session/visits Writing reports 13.00-15.00	Closing seminar 13:30-15:30 Preliminary reports
	Panel work time 15:30-16:30		Panel working time	Panel working time	
Panel Chairs Meet 16:00-17:30	Visit Design Factory 17:00-18:30				Departures
Panel members meet 17:30-18:30				Panel Chairs meeting 17.15-18.30	
Welcome drinks and dinner for all panel members, 18:30-21:00 Otaniemi	Working dinner 19:00-20:00 DF	TEE Dinner 19:00-21:30	Panel working time Working dinner	Panel working time Working dinner	

Appendix B7.

Sample of a Site Visit Week Programme (School of Engineering)

Aalto university / Teaching Evaluation Exercise 2010-2011
Panel site visit week 10.4.-15.4.2011 Aalto School of Engineering
Panel week programme as on 8.4.2011

School of Engineering (10 self-evaluation reports)

Architecture: Professor Aino Niskanen
Landscape Architecture:
Professor Maija Rautamäki
Energy and HVAC Technology:
Professor Martti Larmi
Mechanical Engineering:
Professor Kalevi Aaltonen
Geomatics: Professor Kirsi Virrantaus
Real Estate Economics:
Professor Arvo Vitikainen
Master's Programme in Real Estate Investment
and Finance: Professor Kauko Viitanen
*Civil and Environmental Engineering:
Professor Juha Paavola
**Structural Engineering and Building
Technology:
Professor Jari Puttonen
Transportation and Environmental
Engineering: Professor Terhi Pellinen
Master's Programme in Environmental
Technology (Lahti Centre): Professor
Juha Kaila

*note: this programme is the Bachelor's
degree level programme of Structural
Engineering, self-evaluation report is
included in the Structural Engineering
and Building Technology (next one from
the list).
** renamed from 1.1.2011 as Structural
Engineering, and includes the programme
of Civil and Environmental Engineering.

Practical information:

Interviews : Rakentajanaukio 4
Panel working room: TUAS house,
Otaniementie 17, room 1594

School provides refreshments during the
interviews

Coordinator: Ritva Viero (Mari Martinmaa)
Student Guide: Elena Suutarinen

Site visit schedule:

Sunday 10.4.2011.

Arrival: Helsinki-Vantaa Airport. Hotel:
Radisson Blue, Otaranta 2, Espoo
16.00-17.30 Panel Chairs' Meeting at Dipoli,
Otakaari 24, Room 21.
Present: President of Aalto University Tuula
Teeri and Vice President Martti Raevaara.
17.30-18.30 Welcome drinks and panel
members' informal get-together. Dipoli 4
a, b and lobby.
18.30-21.00 Informal Dinner. Dipoli 4 a, b.
Present: President of Aalto University Tuula
Teeri, Vice Presidents Heikki Mannila
and Martti Raevaara, TEE Steering group
members.

Monday 11.4.2011

Breakfast at the hotel. Departure 8.30 for
plenary session at Dipoli, Luolamies.
Plenary: 9.00-10.15 TEE goals and
orientation for the week
Vice President Martti Raevaara and Project
Manager Dr Lena Levander
Coffee break.
10.30-11.30 Panel meetings (same place).
Panels meet to prepare for first interviews.
12.00-13.00 Lunch buffet (same place)
Meeting Deans and Vice Deans, School
specific TEE coordinators, TEE student
guides.

- Departure at 13.15 for first interviews at Schools (if time allows, visit TUAS to see the panel working room).
- 14.00-15.15 Dean Petri Varsta, Vice Dean Juha Paavola, and Head of Academic Affairs Marjo Immonen. Rakentajanaukio 4, KI, 1st floor.
- Panel working time at TUAS Otaniementie 17, room 1594.
- Departure for visit 16.30 (walk or taxi)
- 17.00-18.00 Visiting Design Factory, Betonimiehenkuja 5. Activities presented by Professor Kalevi Ekman
<http://aaltodesignfactory.fi/>
- 18.30-20.30 Dinner at Design Factory Stage. Present Martti Raevaara and Kalevi Ekman. Also present Development Manager Olli Hyppönen, Development Manager Lauri Saarinen and Developer and researcher Anu Yanar from the unit of Strategic Support for Research and Teaching.
- Return to the hotel about 20.30.
- Tuesday 12.4.2011**
- Breakfast at the hotel. Departure at 8.15 (transport).
- Panel working time at Otaniementie 17, room 1594.
- Walk to Rakentajanaukio 4, R7, 3rd floor.
- 10.00-10.45 Panel interview: Students Anni Voutilainen (Transportation and Environmental Engineering), Janne Hanka (Structural Engineering and Building Technology), Rafael Linnankoski (Architecture), Tuomo Näränen (Landscape Architecture), Katri Leino (Transportation and Environmental Engineering).
- 11.00-11.45 Students Samuli Salovaara (Mechanical Engineering), Roosa Nieminen (Energy and HVAC Technology), Siiri Friström (Real Estate Economics), Anssi Krooks (Geomatics).
- Lunch 12.00-13.00 is served at the panel's working room TUAS Otaniementie 17, 1594.
- Interviews at Rakentajanaukio 4, R7, 3rd floor.
- 13.30-14.30 Panel interview: Employers representatives.
- Managing Director Juhani Reen, FRICS (Real Estate Economics)
- Deputy Director General Arvo Kokkonen, National Land Survey of Finland (Real Estate Economics)
- Director Mervi Karikorpi, Technology Industries (Mechanical Engineering)
- Architect Anna Brunow, Brunow & Maunula Architects (Architecture)
- R&D Director Antero Vattulainen, Kuusakoski Oy (Transportation and Environmental Engineering)
- Paavo Uuttu, Blom Kartta Oy
- Senior Lead Jarek Kurnitski, Sitra (Energy and HVAC Technology)
- Technical director Mikko Leppänen, Ramboll Oy (Transportation and Environmental Engineering) Managing Director Tapio Aho, Magnus Malmberg Oy ®
- 15.00-16.00 Panel interview: Alumni MSc Jussi Palmu, Evli Property Investments (Real Estate Economics)
- MSc (Tech.) Kari Sainio, Isku Oy (Mechanical Engineering)
- Architect Pekka Helin, Helin & Co (Architecture)
- Managing Director Juha-Heikki Tanskanen, Itä-Uudenmaan Jätehuolto Oy (Transportation and Environmental Engineering)
- Landscape Architecture Arto Kaituri, WSP Finland Oy (Landscape Architecture)
- R&D Director Teemu Vehmaskoski, RIL (Transportation and Environmental Engineering)
- Senior Consultant Kyösti Laamanen, SITO (Geomatics)
- Senior Technology Adviser Tom Warras, Tekes (Structural Engineering and Building Technology)
- Senior Advisor Tea Erätuuli, Helsinki Energy (Energy and HVAC technology)
- Rakentajanaukio 4, R7, 3rd floor
- Panel working time until 17.30 at the interview room. Back to the hotel.

At 18.15 Departure from the hotel for the TEE Dinner at Restaurant Sipuli, Wintergarden – Talvipuutarha, Kanavaranta 7.

19.00-21.30 Panel TEE Dinner

Present Vice President Martti Raevaara, Deans and Vice Deans and other hosts to be confirmed later.

Transportation to the hotel leaves at 21.30.

Wednesday 13.4.2011

Breakfast at the hotel. Departure at 8.15 (transport).

Panel working time, TUAS Otaniementie 17, 1594.

Degree programme interviews: 2 parallel sessions all through the day, panellists in 2 groups. Rakentajanaukio 4

9.30-10.30 Architecture (Room: R7), Mechanical Engineering (Room: R8)

10.45-11.45 Landscape Architecture (R7), Energy and HVAC Technology, (R8)

Lunch 12.00-13.00 is served at the panel's working room TUAS 1594

Interviews continue at Rakentajanaukio 4.

13.30-14.30 Structural Engineering and Building Technology (R7), Real Estate Economics and Master's Programme in Real Estate Investment and Finance (R8)

14.45-15.45 Transportation and Environmental Engineering (R7), Geomatics (R8)

16.15-17.15 Master's Programme in Environmental Technology (R7)

Dinner served at 18.00, panel's working room 1594.

Panel working time continues.

Thursday 14.4.2011

Breakfast at the hotel. Departure at 8.15 (transport).

Panel working time at TUAS 1594.

Interviews at Rakentajanaukio 4, R7, 3rd floor

9.45-11.00 Panel interview: (R7) Study coordinator / Planning officers / Development Manager

Planning officer Päivi Kauppinen (Geomatics and Real Estate Economics)

Planning officer Seppo Hänninen (Structural Engineering and Building Technology and Transportation and Environmental Engineering)

Planning officer Jaana Kauppi (Master's Programme in Environmental Technology)

Planning officer Jukka Luotonen (Architecture and Landscape Architecture)

Planning officer Saara Sokolnicki (Geomatics and Real Estate Economics, International affairs)

Study coordinator Mari Martinmaa (School of Engineering, quality of education and teaching)

Development Manager Olli Hyppönen (Strategic Support for Research and Education)

11.15-12.00 Visit suggested by the School (panel members divide into groups according to interest)

-Laboratory Exercise of Course Structural Mechanics II (Yield-line theory for plates) in the testing hall (Structural Engineering and Building Technology)

-Game in Urban Planning and Development (Geomatics and Real Estate Economics)

Lunch 12.15-13.15 served at the panel's working room 1594.

13.30-15.30 Interview/visit as requested by the panel (or panel working time).

Panel working time at TUAS 1594 (refreshments)

Chairs' meeting 17.15-18.30
Lämpömiehenkuja 2, 2nd floor, room 210
Tammekann

18.30 Working Dinner at TUAS 1594.

Panel working time continues TUAS 1594.

Friday 15.4.2011

Breakfast at hotel. Check-outs. Depart hotel 8.30 (transport).

9.00-11.30 Panel working time at TUAS 1594.

Refreshments

12.00-13.00 Lunch at Saha, Konemiehentie

1. <http://saha.tkk.fi/>

Present: President of Aalto University Tuula Teeri and Vice President Martti Raevaara

13.30-15.30 Closing Seminar, Saha

Observations and preliminary reports by the panel Chairs

Present: President Tuula Teeri,
Vice Presidents Heikki Mannila and
Martti Raevaara, Deans and Vice Deans
and possibly some others.

Departures after 15.30.

Appendix B8. Guidelines for the Panels

Teaching Evaluation Exercise 2010-2011

Theme: Degree programme evaluation

Contents

1 Background.....	1
2 The purpose of the evaluation.....	2
3 The utilisation of the results.....	3
4 Evaluation process.....	3
4.1 Self-evaluation.....	3
4.2 Peer review process by external evaluation panels.....	4
5 Tasks and working arrangements for the panels.....	4
5.1 Evaluation task.....	4
5.2 Desk work, preparatory meeting and site visit.....	4
5.3 Evaluation report.....	5
5.4 Confidentiality.....	7
5.5 Conflict of interest.....	7
6 Appendices.....	7

This document defines the guidelines for Panels. The document should be read in conjunction with the instructions that have been compiled for the use of degree programmes that will be evaluated.

Background

Aalto University was created from the merger of three Finnish universities: the Helsinki School of Economics, the Helsinki University of Technology, and the University of Art and Design Helsinki. The three universities were all leading and renowned institutions in their respective fields and in their own right. Aalto University officially started on January 1, 2010. The combination of three universities opens up new possibilities for strong multi-disciplinary education and research. The new university's ambitious goal is to be one of the leading institutions in the world in terms of research and education in its own specialised disciplines. There are about 20 000 students, 4500 staff members and 300 professors in Aalto University. In the year 2009, 1567 Master's and 180 Doctoral Degrees were taken.

Starting from January 2011, Aalto University has six Schools: the School of Economics, the School of Art and Design, and the former Helsinki University of Technology has been divided into four Schools. The new Schools are the School of Engineering (former Faculty of Engineering and Architecture), the School of Chemical Technology (former Faculty of Chemistry and Materials Sciences), the School of Science (former Faculty of Information and Natural Sciences) and the School of Electrical Engineering (former Faculty of Electronics, Communications and Automation).

According to its mission statement, Aalto University is an international and multicultural learning community which educates responsible, broad-minded and

independent individuals who are capable of acting as role models and leaders in society. Increased postgraduate education, as well as students' improved skills for entering professional life, has been stated as the key goals of our teaching. As an inspiring and ambitious community, the University is expected to encourage lifelong learning.

The Board of the Aalto University Foundation decided at the completion of the Research Assessment Exercise (RAE) process in 2009 that teaching would be evaluated immediately afterwards. The Aalto University Teaching Evaluation Exercise (TEE) was set in motion in spring 2010 and will be carried out during the academic year 2010-2011. The evaluation is initiated and funded by Aalto University.

Different types of evaluations concerning the quality of education have been carried out in the universities now forming Aalto University. Within recent years, their quality assurance systems have been audited by the Finnish Higher Education Evaluation Council (FINHEEC); some units have gained the status of a national Centre of Excellence in university education granted after an evaluation by FINHEEC. Furthermore, there have been numerous departmental efforts of evaluation and benchmarking for educational development. The TEE is the first venture to evaluate teaching and learning at the Aalto University level. New degree programmes and joint courses have been innovated to offer students new opportunities for cross-disciplinary studies. However, the TEE focuses on programmes that have been running for more than two years.

The purpose of the evaluation

The purpose of the Teaching Evaluation Exercise is to evaluate the current state and the quality of the planning, management, implementation and development of the degree programmes (excluding doctoral studies), reflect on the relation and relevance to the best practices elsewhere and to provide feedback and recommendations for future development of the degree programmes. *The evaluation focuses rather on educational procedures and practices than the quality of results or individual teachers' teaching approaches.*

Moreover, as the degree programmes review their present state against the development areas of teaching and learning outlined in the Aalto University strategy, the Aalto University leadership will receive information to refocus the current development areas for the next Aalto strategy.

The specific aims of the evaluation are:

- To identify the strengths and weaknesses of the degree programmes of Aalto University
- To find and share the best practices, to develop "next practices" and create new innovative teaching approaches
- To recognise areas that require specific action for improvement
- To obtain information that can be used for enhancing students' learning
- To obtain information that can be used for sustaining teachers' work
- To support the building of Aalto University's teaching and education quality assurance system
- To develop the implementation of the evaluation process for future evaluations
- To use the feedback and recommendations for continuous improvement and connect it to the annual planning process.

The quality of teaching and learning, as well as the educational processes, is an outcome of many factors where teachers, students and the entire learning environment constitute a complex and dynamic entity. Moreover, quality usually has many interpretations. These aspects add to the challenge of defining the most focal issues in order to enhance the quality of teaching and learning. The evaluation is not based on predetermined criteria, and the University is not seeking accreditation nor is it about auditing quality systems. The aim of the TEE is to identify the best practices and some salient issues for further development of degree programmes with the help of peers from other universities.

The principles for the planning and implementation of the TEE evaluation are based on the view that evaluation is a formative and appreciative process rather than a summative and judgmental one. Evaluation is naturally framed by the context it occurs in and diverse interests; however, it should be regarded as an interactive and collaborative learning process for all. The salient point is that the evaluation aims for enhancement rather than defines what is right or what is wrong¹.

The utilisation of the results

There are several expected benefits from the evaluation process. The degree programmes and departments can make immediate use of findings during the self-evaluation stage to develop their programmes. The external evaluation panel consisting of international colleagues and students will provide useful feedback and recommendations. It is expected that the entire process will create ideas to improve the quality of the degree programmes, thereby leading to enhanced learning. As degree programmes analyse and record their strengths in teaching, it acknowledges good teaching and enhances the sharing of innovative teaching practices. The process will also help to identify and formulate educational development focus areas.

The feedback and recommendations report from the panels will be analysed and conclusions drawn for action in autumn 2011. The leadership of Aalto University will discuss with each School's leadership and degree programme leaders the need for development resources during the academic year 2012–2013. The outcome and feedback also provide information for the annual planning process and are the basis for the strategic discussions between the University's leadership and the individual Schools for the 2012–2013 academic years.

Evaluation process

Self-evaluation

The degree programmes carry out a self-evaluation by discussing the issues outlined in the self-evaluation questions. The responses as written reports will be the main documentation sent to the panels. Supplementary information about Aalto University and its Schools, the Finnish Higher Education system as a whole, as well as statistical data will also be sent to the Panel members (see Instructions for Self-evaluation, p.5). The document file also includes the reports compiled by units/departments that provide so called basic courses during the first years of studies. The units requested the possibility to describe their educational provision and goals for the Panels, as the

¹ Cuba, E.G. & Lincoln, Y.S. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.

degree programme reports will probably bring up issues concerning these first-year compulsory studies. The number of these additional reports per Panel varies and they are for background information only.

Peer review process by external evaluation Panels

The external evaluation will be conducted by international expert Panels appointed by Aalto University. There will be six Panels, one for each Aalto School. Each Panel will have a Finnish academic member who also ensures that the Finnish higher education system is understood correctly in the Panel. There will also be a student representative in each Panel.

The principles for the composition of the Panels are as follows: expertise in one of the subject areas of the respective Aalto School, versatile teaching and pedagogical experience, evaluation experience and interest in educational development. The Schools, steering committee and educational developers were asked to propose experts for the Panels. The steering committee worked out the preferences for the Panel chairpersons and other members according to the criteria set. Panel members were nominated by the President of Aalto University after the consent of the nominee.

The Panel visits take place during one week, 10.–15.4. 2011. The purpose of the visit is to verify and supplement the information given in the self-evaluation reports. Prior to the site visit week, the Panel chairs have a preparatory on-line meeting in March where they will discuss the evaluation task. Finally, the evaluation Panels will provide their feedback and recommendations at a seminar at the end of the site visit week and as a written report. The Panel chairs are invited back to Finland on 17th August prior to the publishing of the TEE report to sign away their feedback and recommendation reports to the Aalto leadership. The TEE report will be released 9.9.2011. A timetable for the entire TEE is in the Instructions for Self-evaluation on page 5.

Tasks and working arrangements for the Panels

Evaluation task

The Panels compile their feedback and recommendations as a report. The specific task is to identify

- strengths and weaknesses of the degree programmes
- good practices and innovative approaches
- areas that require specific action for improvement.

If there are any other observations and findings, these can be included in the report.

Desk work, preparatory meeting and site visit

Panel members base their evaluation on desk work prior to the site visit and the interviews during the site visit week in Finland. During the desk work stage each panellist makes his/ her own preliminary observations on the basis of the materials and notes down general and degree programme specific questions. Desk work is based on the following documents: Self-evaluation reports of the degree programmes, School-specific and Aalto University background information, statistical data and Student Statements from the students from each School. The Panels will also get background information about the Finnish higher education system.

The materials will be provided to the Panel members on a memory stick approximately six weeks before the site visits. Should the Panel members request additional material, they should send their requests by 25.3.2011 to the project manager at evaluation@aalto.fi. The requested material will be provided to the Panel upon arrival to the site visit. The Panel members may also wish to consult the University's web pages at <http://www.aalto.fi/en/>. Useful information about Finnish higher education can be found on the web pages of Ministry of Education and Culture www.minedu.fi and the Centre for International Mobility www.studyinfinland.fi.

During the Panel site visit week the Panels will be interviewing different groups and people representing programme leaders, teaching staff, students, and alumni as well as employers' representatives. There are six Panels, one for each Aalto School. Each Panel evaluates the programmes within one School. The chairpersons for each Panel have been agreed on in advance. The evaluation Panel is expected to form an opinion of the quality of degree programmes' practices, make evaluative conclusions, point out good practices and give recommendations for the improvement of the programmes. The Panel's evaluation is based on the consensus between the Panel members and the panellists share the responsibility for the provision of the feedback. The feedback is to be based on the self-evaluation reports and information gathered and observations made during the evaluation visit. The feedback is to be submitted separately to each programme under evaluation. Moreover, the Panel is asked to give feedback and recommendations to students of all degree programmes of the School, and to the School and Aalto University leadership.

The Panels hold a briefing seminar on the tentative results of the evaluation and hand in their preliminary reports at the end of the site visit week. Each Panel can decide what observations and issues are raised in the seminar. The Panels will deliver the final evaluation reports to the Evaluation Project Team in May. Degree programme leaders will then have the opportunity to examine the reports for any misunderstandings or inaccuracies.

Evaluation report

It is important to agree before the interview what is asked, who makes the questions and how the discussion is documented. The questions to be presented during the interviews should be in line with the self-evaluation questions.

The Panels should reach a consensus based on the Panel's discussions during the site visit week. The Panels should ensure the evaluation report takes into account all the materials available to them, including all the self-evaluation reports, supplementary materials and site visit interviews. The members of the Panel share the responsibility for the writing of the report; however, it is the responsibility of the Panel chair to make the final report. The feedback is to be submitted separately to each programme under evaluation. Each Panel is requested to present a penultimate draft of the report at the end of the site visit week in Finland. The deadline for the final reports is 9.5.2011 (wk 19). The following principles shall be observed in the production of the written feedback:

- Providing evidence and documentation: The text should mention the source of a description of a practice or evaluation: a self-evaluation report, discussions during the site visit/ interviews, the Panel's own recommendations.
- Maintaining the connection between the evaluation and the evaluation materials: The feedback should make reference to the self-evaluation process and raise areas

in need of development or present development ideas. The evaluation Panel is also expected to draw its own conclusions.

- Active voice: The feedback should be written in the active voice, e.g. meaning that the Panel should express exactly who should improve their operations.
- Writing on a concrete level: The Panel should give concrete examples and express its ideas in specific terms.

The Project Team will compile the final TEE report including the description of the evaluation process and instructions. The evaluation Panels' reports are included in the final report without any changes in the substance of the reports. The final report including the evaluation reports will be published both in printed and electronic form by Aalto University.

The structure of the feedback report

Part A.

Feedback and recommendations for the teaching staff of degree programme

1. Strengths of the degree programme. The presentation of the Panel's evaluative overall observations about issues presented in the self-evaluation report². The first section should end with the Panel's conclusions and evaluations of the degree programme's strengths.

2. Evaluative feedback: This concerns the three main themes presented in Chapter 3 of the self-evaluation report. Please use the following scale: absent/poor, emerging, good, excellent. Give reasons for your feedback.

- a. Degree programme planning and management (questions 1-8);
- b. Implementing Teaching of the degree programme courses and modules (questions 9-16);
- c. Degree programme evaluation and development (questions 17-22).

3. List of observed best practices (max. 3) in:

- a. Degree programme planning and management (questions 1-8);
- b. Implementing Teaching of the degree programme courses and modules (9-16);
- c. Degree programme evaluation and development (17-22)

4. Recommendations for improvement

The Panel shall prioritize its recommendations so that it will first present recommendations that can be implemented in the short term and then give recommendations for long-term development. Furthermore, the Panel may raise other possible observations.

² Note that Chapter 4 of the self-evaluation report is a diagnostic tool for finding out the present state of the implementation of Aalto strategy. This part of the self-evaluation is not included in the panel's evaluation assignment.

Part B

Feedback and recommendations to students of all degree programmes of the School

The Panel is requested to write an independent section on recommendations/feedback to students.

Part C

Feedback and recommendations to School and Aalto University leadership

The Panel is requested to write an independent section on recommendations/feedback to the School leadership and Aalto University leadership.

Part D

Observations on the evaluation process and recommendations for improvement

Confidentiality

The Panel members agree to refrain from making use of and/or divulging to third parties any non-public material, facts, information, documents or other matters brought to the attention of Panel members during the TEE. The documents included in the evaluation reports, as well as the self-evaluation reports, are strictly confidential. Once the evaluation has been completed, it is required that all the self-evaluation reports and other confidential material and any copies made of them be destroyed. Confidentiality must also be maintained after the evaluation process has been completed.

The final report, compiled by the Project Team, is the main instrument for communicating the results of the TEE.

Conflict of interest

The Panel members are chosen on their professional merits and are not believed to have any conflict of interest. The Panel members are required to sign a declaration of the lack of conflict of interest. A Panel member is disqualified if his/her impartiality is endangered. If a Panel member is contacted by a member of the units of evaluation, the Panel member should ask them to contact the Evaluation Project Team and inform the evaluation project manager immediately. All the documents included in the evaluation are sent by the Project Team.

Appendices

[In order to avoid duplication of the various documents in the final TEE report Learning together – towards enhancing the co-creation of education, the appendices of the Guidelines for the Panels -document have been removed. The appendices of this document, for example the list of the degree programmes to be evaluated, can be found in the Appendices B of this report.]



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