



Eurofound

Educational and training services: Anticipating the challenges

Case study: Aalto University, Finland

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Introduction

Education and training remain key policy priorities across Europe because of their importance in fostering future economic growth in the European Union. The education and training sector is addressing some of the big policy challenges in Europe and more globally through innovation, job creation, inclusion and active citizenship, to mention a few themes. This focus is a logical next step following previous policy strategies and initiatives aimed at promoting lifelong learning. As Green (2002) observes, lifelong learning has been at the centre of European educational debate for at least a decade. It is reflected in a large number of policy strategies and initiatives, first and foremost the strategic plans for European cooperation in education and training (ET 2010 and ET 2020) and the New Skills for New Jobs Initiative. Schemes to increase mobility and the transparency of national educational systems, such as the European Qualifications Framework (EQF) and the higher education framework European Higher Education Area (EHEA), as well as frameworks and networks to promote the quality assurance of education and training across Europe, are all measures that affect the education and training sector. Changing framework conditions brought about by economic, ecological, sociodemographic and technological developments will present providers of learning services with new challenges and opportunities. They will also affect the outcomes and performance of the sector, as well as employment, working conditions and skills needs.

This case report forms part of a study conducted by the Danish Technological Institute under contract to the European Foundation for the Improvement of Living and Working Conditions (Eurofound). The purpose of the study is to provide empirical evidence about the state of the education and training sector in Europe within the overall context of lifelong learning, to identify and illustrate trends and practices that can function as a source of inspiration. The aim is to produce original scenarios for the sector in the European Union (EU27) in order to provide Eurofound and its stakeholders with a sound and pragmatic knowledge base to improve the understanding and anticipation of change in the sector up to 2020 in the EU.

The study has a particular focus on employment and the supply of labour within the sector. What sort of teaching, training and education jobs will be needed in the future? And what are the skills necessary to do them? How do we make adjustments and develop the current educational workforce in order to be prepared for future trends?

This report is one of six case study reports. The main objective is to illustrate one example of an innovative approach to anticipating the challenges faced by the education and training sector.

The report is based on preliminary desk research of sources relating to the case and a one-day case visit including face-to-face interviews with the following representatives of the case:

- Vice-President Heikki Mannila, Aalto University
- Policy Director Jari Jokinen, Aalto University
- HR Director Hanna-Leena Livio, Aalto University
- Professor Kalevi Ekman, Aalto University
- Director Anita Lehtikoinen, Ministry of Education and Culture, Division for HE and Research
- Director Timo Kekkonen, Confederation of Finnish Industries

General description of the initiative

Finland recently introduced a university reform that gives more autonomy to universities. The reform has fostered the development of a new breed of universities across Finland which are legal entities, such as private not-for-profit companies. However, most of the universities' funding still comes from the state.

Aalto University is an example of good practice in anticipating and managing change at national level through close collaboration between the Finnish Ministry of Education and Culture, the Finnish Ministry of Employment and Economy and the private business sector. Aalto University represents one way of approaching the skills challenges resulting from intensified global competition, technological change, and the way competitiveness is achieved.

The case is interesting from a skills perspective because it illustrates how educational institutions adapt to the increasing need for research-based innovation by merging schools, faculties and departments that used to be separate entities, thereby changing the roles of university teachers from lecturers to active participants in collaborative learning processes.

Background

In the past 10 years there has been intense debate about higher education in Finland. Criticism has come from within the university sector itself as well as from industry and the state.

- The universities pointed to the challenges involved in competing with top universities around the world while at the same time being part of the Ministry of Education and Culture. One example of the constraints inherent in the centralised governance is that the universities could not develop individual HR strategies.
- The private sector raised issues such as the lack of competitiveness in higher education when compared with international universities, despite the top-class results achieved by Finland in compulsory education, as shown by the OECD Pisa studies.
- The Ministry of Education and Culture observed that the Finnish higher education sector was somewhat fragmented with a relatively high number of universities and polytechnics spread across the country. This was considered an obstacle to efficiency and further development of higher education in Finland.

As part of the preparations for reform, a working group developed the idea of merging three Helsinki universities: the University of Art and Design, the University of Economics, and the University of Science and Technology, into what would later become Aalto University.

All the stakeholders – the education sector, business and industry, the government, and the ministries – agreed on the reform and the changes in the higher education sector including the merger leading to the creation of Aalto University. The reform was initiated in 2007 and the University of Aalto enrolled its first students in 2010.

Scope of the project

Aalto University is a private foundation with an external board of individuals deciding on the strategy of the university. The university has created an organisation that includes departments for the different types of services such as HR, communication, and policy and foresight.

The goal of Aalto University is to be a world-class university within 10 years in the fields of technology, business and design. The university has identified the challenges it needs to address to achieve this goal, the most important being:

- a rigid career system for professors;
- insufficient mobility and internationalisation of students and professors;
- lack of academic leadership;
- not enough ambition among the managers and professors of the university.

Aalto University aims to change the traditional perception of teaching in relation to academic research. Professors generally consider teaching to be a second priority as academic research is perceived as the main role of a professor. In addition, publishing papers is considered essential to career advancement. Hence, some professors are reluctant to spend time teaching. However, at Aalto University both academic research and teaching and learning are at the centre of the university, and all professors are obliged to be involved in both. Teaching must be taken seriously, as it is in the world's leading universities.

Aalto University is multidisciplinary and focuses on the interaction between the different fields of study. Students are actively encouraged to engage in studies and activities across the university. The goal is to introduce more problem-based or problem-solving learning, and to this end the university has developed what are known as 'learning factories'.

Activities

Learning factories

Learning factories are workshops designed to facilitate new forms of multidisciplinary collaboration focusing on teaching and learning. The factories are described as:

platforms that combine the expertise of the different Aalto University schools in the field of product development, media and services. The factories are designed to facilitate new forms of collaboration in an environment where academic teams, researchers and students work together with companies and communities.

(Design Factory Annual Report, 2009–2010)

The three learning factories at Aalto University – the Design Factory, the Media Factory and the Service Factory – are the university's first joint projects. The factories work within different disciplines with the focus on problem-based learning and teaching. In particular, Aalto University considers the Design Factory to be the accelerator of change in the Aalto culture of operation and teaching, as it demonstrates interdisciplinary and problem-based learning and research; in other words the core philosophy of Aalto.

The Design Factory was launched in 2007. It offers a new, open environment for research and education on product development by providing physical facilities with machinery, tools, materials and equipment, thus enabling students to engage in the practical development of large prototypes. The group work facilities and rooms of the Design Factory have been designed to allow flexible use 24 hours a day. Moreover, companies as well as students and researchers are allowed to use the factories in the spirit of 'open innovation'.

Both interdisciplinary and subject-specific courses are hosted at the Design Factory. It runs its own courses, including a product development project and Stanford ME310 Design Innovation, but professors from all departments of Aalto University may teach their courses there. If needed, the professors in question may gain inspiration from the researchers

and professors teaching regularly at the Design Factory. The regular staff at the Design Factory have mainly been recruited from the former University of Technology on the basis of their insight into the problem-based learning approach. The staff also run continuous professional development programmes for the professors of Aalto University.¹

The Media Factory, initiated in 2007, is an open collaborative network bringing together the three universities' researchers, teachers and partners specialised in media and communication. The Media Factory aims at identifying new and interesting areas of media research and launching joint research projects, curricula and courses between the Aalto University schools. The activities cover the entire materials and communication chain from raw material to message production, formation and reception.²

The Service Factory is also an open collaborative network and a platform for multidisciplinary cooperation that brings together the service-related expertise of the Aalto University schools. The Service Factory identifies new areas of service research, launches joint research projects between the Aalto University schools, and offers excellent opportunities for collaboration in teaching. Its goal is to produce new research findings, develop education on services and create service innovations.³

Development of career system

The reform has made it possible for Aalto University to develop a career system for professors called the 'tenure track', inspired by similar systems in the United States. The system replaces the old academic career path with a new path where teaching is an integral part of the work of scholars up to the highest level. Job titles have been changed, also with inspiration from the US system, so that all categories of teaching staff are now called 'professor' with a prefix indicating their academic experience (assistant professor, associate professor, professor and distinguished professor). A specific path must be followed, including reviews and evaluations, in order to be promoted to the next step.

Under the old system, all academic university staff were recruited according to the number and level of scientific publications they had produced and other competences, without reference to their teaching skills. This made it very difficult for young, promising academics to pursue a career emphasising research-based teaching. The new system enables younger academics to enter into the new career path. Even though the system is inspired by those in US universities, it is not identical to these systems. For example, when a person is accepted for a full professorship at Aalto University, that person only competes with him or herself. In the US, he or she would have competed against another promising candidate.

Aalto University has introduced a programme of continuous professional education of the academic teaching staff and professors. The programme includes a generic part in pedagogy and more specialised courses for further development. The programme gives 60 ECTS credits altogether. So far, the programme is not compulsory. However, there are ongoing discussions on the merits of making some modules compulsory.

¹ <http://www.aalto.fi/en/research/multidisciplinary/factories/>

² <http://www.aalto.fi/en/research/multidisciplinary/factories/>

³ <http://www.aalto.fi/en/research/multidisciplinary/factories/>

Finance/costs

Unlike the practice in other countries, private funding is not deducted from the public funding of the university. This is a crucial element of the university reform. The state has initiated several incentives to create a new culture of private fundraising. In the first accounting period ending June 2011, the state promised to contribute two and half times the amount raised by private donors. Thus, Aalto University was promised a public contribution of €500 million if it raised €200 million from private partners for its foundation. Moreover, the state has introduced tax incentives for private donors.

At the operational level, the budget was around €400 million in 2011. Of this, 43% comes from private sources or research, and the state provided an extra €100 million as operational funds, which is the key aspect of the funding.

The Confederation of Finnish Industries has coordinated the private fundraising.

Staff

Aalto University has approximately 5,000 employees of which 300 are professors and 300 are other teaching staff such as PhD students, post-doctoral students, teaching assistants or language teachers, etc. Previously the two groups were not integrated as the professors did not necessarily teach. This has changed, however. The strategic aim is that everybody researches as well as teaches. Most of the academic teaching staff have traditional backgrounds in the fields of art and design, technology or economics.

The tenure track has given Aalto University the possibility to invite applications for all levels of professors in their recruitment. It gives the university more freedom to decide who they want, and they are able to offer a certain salary or pay moving expenses for candidates. Moreover, the tenure track has enabled the university to compete with other high-profile universities around the world. However, the representatives of the Aalto University emphasise that salary is not the main issue – they have found that much of the university's attractiveness stems from its research environment, working conditions and – where international candidates are concerned – Finnish society in general. Women researchers in particular tend to find Scandinavia a better career environment than many other places. Overall, the introduction of the tenure system has led to an increase in the number of international applicants for the available positions.

Stakeholders

The Ministry of Education and Culture has obviously been a key stakeholder in the strategic development of Aalto University due to the university reform and the changes to the legislation, and the ministry will continue to play an important role in the quality assurance of the university.

The Confederation of Finnish Industries was closely involved in the lobbying for Aalto University and the strategic planning of it, as well as acting as the key coordinator of the private fundraising. The confederation and its members will continue to be involved in the development of the university, functioning as a coordinator between companies and Aalto University.

The Aalto University Board is an external governing board that decides on the strategy, operations and financial issues of the university. The board is responsible for any far-reaching plans. All board members have doctorates and are linked to either industry or research.

Evidence-based results

All Finnish universities are monitored closely by the Ministry of Education and Culture with regard to research, quality and impact. Every four years negotiations are held between the Ministry of Education and Culture and the universities to draw up agreements about performance targets for the following four-year period. The universities must publish

annual reports on performance and progress towards the long-term goals. The Ministry of Education and Culture then provides written feedback to feed into the action plan of the universities.

As Aalto University only began operating in 2010, it is still too early to evaluate the influence of the new concepts embodied in the university on the general quality of teaching and research in the Finnish higher education system. However, other results have been achieved.

- The fundraising for Aalto University showed that it is possible to gain funding and support from private business partners. The funding has meant that several prominent individuals outside the higher education sector, such as CEOs of leading companies, have supported Aalto University in the public debate. This has increased the political strength of the universities and their presence in the political debate about financial priorities.
- The introduction of the tenure track system has meant that the Aalto University has been able to attract more foreign talent, indicating that the quality of teaching will increase with time, according to the university.
- The students are very involved in the process and give their inputs on good and bad things at Aalto University, according to the university's vice-president. They are engaged in the reform of the higher education sector in general.
- The increased collaboration between industry, Aalto University and students in the Design Factory has been very constructive, according to the professors.

The initiative in the educational landscape

Aalto University is generally perceived as the flagship initiative of Finnish university reform. The expectations on the university are therefore high. Other universities in Finland have also merged and created new universities. However, Aalto University is the most important merger and the one receiving the highest level of funding.

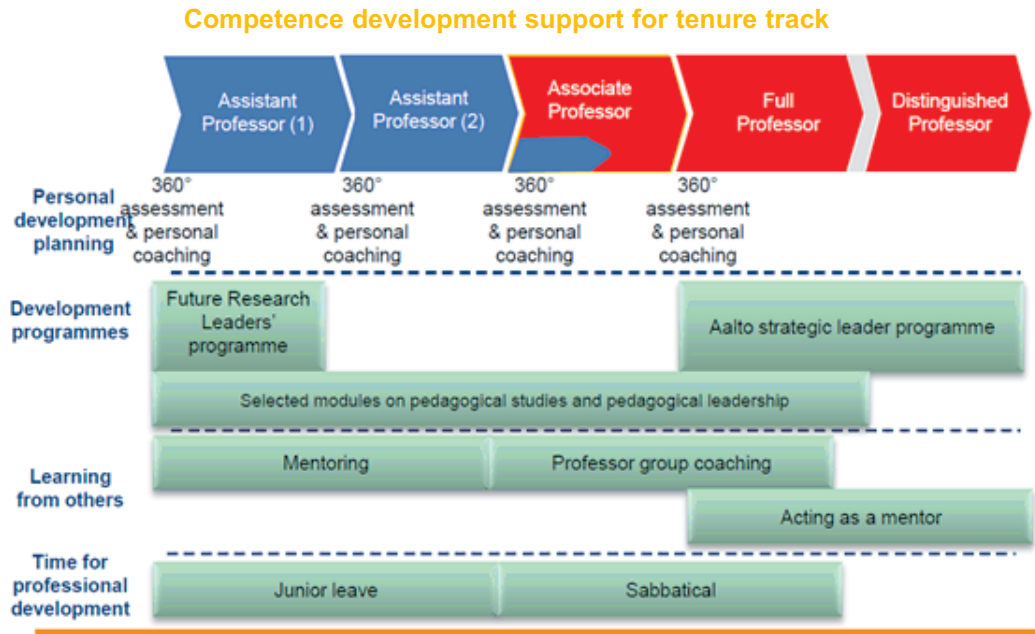
The innovative aspects of Aalto University are enabled through close collaboration between the education sector, the ministries and the private business sector in preparing and implementing reforms in the system of higher education. The innovative elements comprise:

- introducing collaborative learning involving students and companies as learners and providers of knowledge and teachers as facilitators of learning processes;
- a new understanding of what constitutes academic excellence;
- continuous professional development with a focus on teaching;
- development of a new career path in the university;
- new criteria for assessing potential candidates for academic posts.

Aalto University is changing the roles of university teachers from lecturers to active participants in collaborative multidisciplinary learning processes. The approach to learning is problem-based with a focus on the processes of learning. This approach is based on Aalto University's notion that universities need to educate what they call 'T-shaped' people; in other words high-level experts in their own specific fields who know enough about other disciplines to enable them to work with experts from these disciplines. The Confederation of Finnish Industries supports this notion. The development and introduction of the programme of continuing professional education of the academic teaching staff and professors, mainly in the field of pedagogy, is another important innovative element.

Moreover, the introduction of the recruitment system and tenure track for professors that focuses on both research and teaching is creating a new perception of the role of university teachers. The competence development support within the tenure track is illustrated in Figure 1.

Figure 1: Career path and continuing development at Aalto University



Role of teachers

The change of titles from lecturer to professor is not merely symbolic but signals a change in the roles of university teachers from lecturers to active participants in collaborative multidisciplinary learning processes. Lecturing is still a valid tool in teaching, according to the vice-president of Aalto. However, it is important to rethink this method and develop complementary ways of teaching such as the Design Factory methods.

The professors at Aalto are generally positive about these changes, according to the vice-president, because lecturing 200 students at a time may not be constructive for them either, as there is no interaction and students come and go throughout the lecture. Increased personal interaction in smaller groups of students is more beneficial to both teachers and students. In this instance, the teachers of online courses may be PhD students or assistant professors.

Strengths and weaknesses of the teaching workforce

The skills needed by the academic teaching staff at Aalto University are not very specific educational skills according to the vice-president, professors and the HR manager. It is more a matter of the mindset of the teachers. They need to be open to, emphasise, and encourage multidisciplinary. They need to be able to teach students with different backgrounds, as students and professors across the disciplines collaborate. However, even though the university's management strongly encourages work in multidisciplinary projects, nobody is forced to do so.

Specific competences, which are not tied to specific academic disciplines or fields, are needed to participate in multidisciplinary work. The staff at the Design Factory have identified competence needs in the area of problem-based teaching among the Aalto teachers in general. As a consequence, they have developed two programmes for the continuous professional development of professors and associate professors.

- Forum – Designed for teachers who already have some pedagogical training. This course consists of a monthly network activity meeting to discuss a specific topic in the area of learning.
- Opekumppani – Pedagogical support for Aalto teachers. The programme offers the teachers at Aalto University theoretical and practical support to encourage continuous development of teaching practices. The programme includes:
 - the pedagogical knowledge base of a Master of Education;
 - additional workforce and support in planning, executing and evaluating a teaching and learning session;
 - introduction to the Design Factory as an experimental platform of co-creation and of its teaching philosophy.

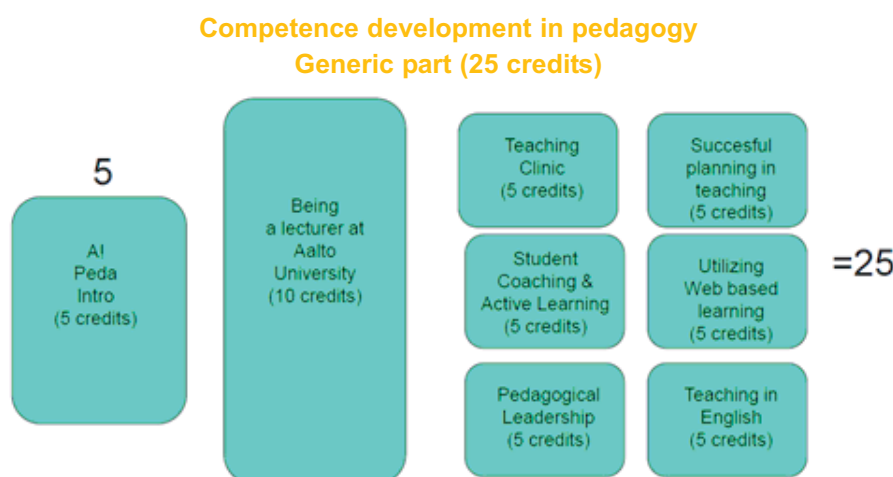
The aim is that these teachers will become agents of change as the programme provides them with better tools to kick-start change in their own environment and influence the learning approach within their specific field.

Initial and continuing education and training of the teaching workforce

The Finnish higher education reform did not include a national HR strategy for higher education institutions – this is the responsibility of the universities themselves. In the initial education of the academic teaching staff at universities, there is no demand for pedagogical training. Traditionally, research has always come first. This had often led to uninspiring teaching, which according to the Ministry of Education and Culture has been a subject of debate in Finland for the last 20 years. However, this may be starting to change as the Ministry of Education and Culture is now focusing on the quality of teaching by measuring of improvements in this area.

Aalto University has a very strong focus on the quality of teaching and has identified the need for a programme of training in the area of pedagogics. The university has introduced such a training programme, which provides a solid base for the continuing professional development of the teachers and professors. The programme is not compulsory, but there is a possibility that some of the modules will be made compulsory. Certain modules are already compulsory in the tenure track. The programme includes a generic part (25 ECT) and an expert part (35 ECT), outlined in Figure 2.

Figure 2: Overview of competence development in pedagogy



The expert part is more targeted to the specific field of teaching and more oriented towards didactics, and there is more room for individual choices of subjects for papers, etc. The programme is still being developed, and only a few teachers have attended the courses until now.

Changes in the target groups

The Ministry of Education and Culture mentions that in Finland the higher education landscape is very diverse, and students come from all kinds of backgrounds with very different skills and competences. Teachers therefore need to be able to adapt continuously to different learning requirements and different levels of knowledge, skills and competences in the student population, who are looking for core knowledge about a specific field and the more general skills and competences such as communication and team working.

The Ministry of Education and Culture recently carried out a survey on teaching in higher education. The survey was directed at both students and staff. Both groups responded that they would like to see more room for direct interaction between teachers and students. The students in particular asked for more discussions with their teachers and saw them as potential mentors.

Future challenges

In general, all stakeholders have been extremely enthusiastic about the university reform and Aalto University, because they understood the need for change. The reform has led to increased competition among the Finnish universities, which the stakeholders perceive as constructive for the future of higher education in Finland.

However, the stakeholders identify a number of challenges still to be tackled:

- the process of change;
- staff reactions to the introduction of new methods of teaching and learning;
- the cooperation with companies in the private sector;
- criticism from the public.

Process of change

Undergoing a process of profound change and development while operating as a fully functioning university is a challenge, according to the Aalto University management. It is important not to let reorganisation of administrative procedures affect research and teaching. The effects felt at the frontline (among teachers and students) should be predominantly positive.

According to the Confederation of Finnish Industries, some staff and students may feel that all the changes are taking place at higher levels. They may feel that they are not a part of the process, which may be a challenge for Aalto University to take into consideration.

Change and development in the university sector is generally a very slow process according to the Aalto University management, as interim arrangements and transitional schemes will have to be revised for students who are at different stages. Changes do cause practical problems that take a lot of time and money to solve. The system needs to change gradually, as in the case of Aalto University, where students remained in their original study programmes, but were given more freedom to attend courses from the other faculties after the merger.

Staff reaction

According to the HR department, not all professors are open to the increased focus on pedagogical training and claim that they have already taught for a long time and they consider themselves experts. For this reason it is a challenge to make all professors participate in the pedagogical modules. The programme has fostered important discussions among the teaching staff, but the HR department has not solved the challenge of involving all the staff in the programme.

The philosophy of learning adopted in the Design Factory is another challenge to some professors, according to the Design Factory staff, as there appears to be a mistaken idea that the multidisciplinary problem-based approach is only valid in certain subject areas.

The professors identify planning of the curriculum and the adaptation to multidisciplinary activities as a challenge to the university, because content-heavy parts of the curriculum have had to be removed to make room for multidisciplinary.

Cooperation between companies and the university sector

The traditional cooperation between companies and the education sector has been ad hoc and project-based. Aalto University is now fostering a shift away from a supplier–customer relationship towards partnership between the two partners. This will take time to change, according to the Confederation of Finnish Industries. Getting companies to engage with the university may sometimes be challenging as it is time-consuming and often the ‘good’ people in a company are the busiest.

Criticism from the public

There has been some public ideological criticism in connection with the private donations, according to the Confederation of Finnish Industries and the ministry. The critics suggest that such donations will limit academic freedom. However, this is not the case as none of the private donations are earmarked. The private donations are additional to the public funding, meaning that the state keeps track of research and teaching at the universities. It is therefore crucial to provide the public with precise information and evidence about this issue, according to the Ministry of Education and Culture.

Future challenges for the university

In addition to the current challenges, the stakeholders identify a number of future challenges.

- Several students increasingly study part time so that they can work as well. It will be an important challenge for university teachers to encourage their students to study full time. Incorporating apprenticeship into the curriculum could be one solution for this problem.
- Increasing international cooperation in specific scientific fields of study and at the university in general.

Sources

Aalto University website, <http://www.aalto.fi/en/>.

Aalto University Design Factory (2010), *Annual Report 2009–2010*.

Green, A. (2002), 'The many faces of lifelong learning: Recent education policy trends in Europe', *Journal of Education Policy*, 17 (6), pp. 611-626.

Interviews

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Policy Director Jari Jokinen, Aalto University

HR Director Hanna-Leena Livio, Aalto University

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