

# Technology-Enhanced Teaching with MyLab & Mastering

## Aalto University, Finland



Case Study	Blended Learning with Pearson	About the Aalto University
School	Aalto University, Helsinki, Finland	<p>Aalto University in Finland is a multidisciplinary university for science, art, technology and business.</p> <p>The University has six schools with nearly 20,000 students offering a wide variety of Bachelor, Master's and Doctoral programs.</p>
Course format	Blended, Lectures	
Courses	Economics for Engineers Finance for Engineers Physics	
Lecturers	Hannele Wallenius Jouko Karjalainen Jouko Lahtinen	

### Course Overview

Courses	Lecturers	Textbook	Digital Component
Economics for Engineers	Hannele Wallenius	Economics, 12th Global Edition by Michael Parkin	MyLab Economics
Finance for Engineers	Jouko Karjalainen	Corporate Finance, 4th Global Edition by Jonathan Berk and Peter DeMarzo	MyLab Finance
Physics	Jouko Lahtinen	University Physics with Modern Physics, 14th Global Edition by Hugh D. Young and Roger A. Freedman	Mastering Physics

# Blended Learning at Aalto University

Aalto University led the way as an early adopter of digital tools by directly purchasing online e-books and assessment from Pearson for their students. Teachers knew that students were not buying or getting access to the required course material as they were showing up unprepared for class and many students had to retake their exams. Additionally, courses had many teaching assistants working to grade and offer tutoring support. Utilizing online ebooks and assessment allowed the department to offer more practice with digital feedback. The assistants could then focus their support and time on the most difficult areas for the current students based on the automated results of quizzes in Pearson's digital learning environment MyLab/Mastering. As they saved time from grading paper assignments, they found they had more time to meet students. In some cases departments reduced assistants reducing costs.

Today, there are approximately 20 department sponsored courses with 3,500 students learning and studying with the support of Pearson's digital learning platforms Mylab & Mastering products.

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## Course 1 - Economics for Engineering - Hannele.Wallenius@aalto.fi

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Dean Walenius was a long time user of the textbook "Economics" by Parkin and MyLab Economics was introduced to her in 2009. She was keen to offer her students additional practice and was excited by the ability of MyLab Economics to automatically grade questions. She used her teaching assistants to translate questions into Finnish for students to use in practice groups. Because her group was typically 400 students this was a big time saver for her team. The digital environment offered the students the practice as well as the ebook as they wanted to drive students to read the book. Dean Walenius stated that her course is well liked and receives high marks from students. She attributes part of this success to MyLab Economics.

“ In MyEconLab you don't have to study static information you can see with the animations how economic growth works. You can experiment and it is interactive, meaning you can make changes to the situation and see the results these changes cause.

”  
says Hannele Wallenius.

Students said they:

“like the idea that they have the exercises there and they can do it wherever they are even if they travel or don't come to class.”



The teaching assistants convert the questions to Finnish and add their own problems to MyLab Economics. This has allowed them to add even more demanding questions that match the course.

They also state that they

“think it is great there are weekly exercises. It forces them to work and not have to cram everything the last day which is what they would otherwise do.”

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## Course 2 - Finance for Engineers - [Jouko.Karjalainen@aalto.fi](mailto:Jouko.Karjalainen@aalto.fi)

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Jouko Karjalainen, also an early adopter of digital classroom resources began assigning MyLab Finance in 2009. His first course was a customized course that allowed him to offer his students finance with accounting material through a combined digital learning environment, MyLab Accounting and MyLab Finance. He has been able to effectively adapt his course with MyLab to meet new curriculum requirements.

Jouko Karjalainen started to document his experience as early as 2010 and he continues to see consistent results and comments from students.

His goal was and continues to be to:

“motivate students to solve a solid amount of problems independently (learning by practicing) and offering opportunities to complete exercises around the academic year (24/7).”

He states he would recommend MyLabs:

“ because it can activate students  
and enable richer assessment. ”

In Instructor Karjalainen's early research from 2010, when he first implemented the MyLabs found that:

- 70 % (172 respondents) considered the exercises useful (27 % called for more, apparently formative, feedback)
- 84% clearly felt that a course that emphasizes exercises supports their learning better than a course emphasizing final exam

Currently he sets prerequisites assignments via the school's LMS (Moodle) for students to complete prior to offering access to the MyLab. This practice manages the department's budget by making sure students are committed prior to offering them a departmentally funded access. It also motivates the students and reinforces the value of MyLab Finance, as students have to work to gain access.



The prerequisites include a series of questions which he calls phase 1. The students are given 10 questions on the first five lectures. The questions have no time limits and students can work as many times as they like. He offers this part of the course in the local language (Finnish). Students need to show they have done the work and a minimum score of 30 is required. In MyLab Finance he focuses on key chapters, allows unlimited practice through the Study Plan, and sets homework and quizzes for each chapter to motivate reading and practice. This course is a great example of bridging the local language needs with the English language resources to get the maximum out of the learning experience.

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## Course 3 - Physics - Jouko.lahtinen@aalto.fi

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Professor Jouko Lahtinen was a current user of Wolfsen Physics when he began to look at incorporating Mastering Physics in his teaching for his Spring 2010 course. He wanted to offer his students practice and quickly saw that in order to use the system effectively all students would need to have access to the system. As help and hints are a hallmark feature of Mastering and they are often linked to the book, he wanted to include the eBook for students. Additionally he wanted to encourage reading of the textbook by making it available to all students.

As there were the examples of MyLab Economics and MyLab Finance within the Engineering school already at this time, purchasing MyLabs directly for students made it easier for the professor to apply for a grant. At that time there was a competing university run system but they chose Mastering based on advanced help and hints. This has continued over the years as his programme has changed and developed and new teachers working under the department have joined into the Mastering Physics courses. The department recently went through another review and though they changed textbooks, they found the Mastering systems help and hints the best resource for their students. With this last change they upgraded Mastering to be integrated directly into the school's Learning Management System simplifying the student's experience with everything in one place.

Jouko shared with us that:

“ 50% of student's over several years reply when asked “What was good in the course? “ Mastering. ”

One example of student comments is:

“ the system is good because you can solve the problems several times. ”



Students even commented on the content stating

“ The problems were good although there were many, and weekly deadlines for exercise make me work . ”



We asked Jouko to sum up his experience over the years with Mastering. Mastering gives me tools to offer different kinds of problems which would be much more difficult on paper. I can offer Pre-lecture questions and Quiz questions via our Moodle integration making it easy to share them with my class. I offer tutorials questions for those who don't want to come to the lecturers. The ability to offer this variety of questions is Mastering dependent. Without Mastering, the basic questions would not be gradable as it would take too much time. Students get points so it makes them work more. Systems like Mastering make students work because of this ability to offer credit easily. Students who work, do better.

Jouko's best tip

“ At this point I would say that once you learn the basics you should start modifying the problems. You can adjust the problems more to how you are teaching, and this means students can't find solutions on the web. In our case it also allows us to offer some question in our local language. ”

Aalto's digital footprint which began and continues with the courses above has spread across the University with teachers also using labs in Biology, Microbiology, and Engineering. Teachers report that students using online resources in one course ask for them in the next!

# Benefits of Integrating MyLab

Instructor Challenges	Solutions Applied	Benefits for Institutions
Large student numbers, time consuming to create content.	Unlimited practice, instant feedback from the platform, instructors can personalize the questions.	Better use of teaching resources with higher level output of resources.

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## Conclusion

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The purpose of this report is to provide a successful institutional experience with technology-enhanced teaching, with a particular focus on the observed impact in the courses embedding in these technologies as well as on the impact on institutional level. Students today expect digital tools within the learning experience. As universities are moving toward technology-enhanced instructional practices, instructors can save time with quality content that utilizes adaptive and personalized learning opportunities.

Courses at Aalto University are examples of a long term implementation of digital learning technologies providing adaptive content through personalized learning solutions.

Lecturers relied on technology-enhanced teaching in their course to:

- meet the needs and requirements of the contemporary students,
- enable personalisation of instruction within larger groups,
- provide students with both adequate theoretical and practical input,
- help students progress in their academic career.

As stated in the evaluation forms, most students choose to use MyLab in their course and appreciate the broadness of learning opportunities in the course. They see the connection in content offered in the lectures and their practice. Students also perceive that unlimited practice opportunities contribute to their academic achievement.