



Technology-enhanced teaching

School name: Copenhagen Business School

Course name: Microeconomics

Course format: blended, lectures, study cafe

Lecturer: Leslie Christensen

Course materials

Book: Jeffrey M Perloff, 2011, Microeconomics, 6th Global Edition, Pearson International

Digital component: MyEconLab

Technology-Enhanced Teaching at CBS

Copenhagen Business School (CBS) was established in 1917 in Copenhagen, Denmark. Today, CBS enrolls 20,000 students and offers undergraduate degrees. CBS, has a tradition of academic excellence and currently ranks number 10 in the world and number 6 in Europe within the field of Business & Management studies.

CBS encourages innovation in instructional delivery through the integration of technology. Changes to traditional classroom teaching were first introduced in the Economics course run by Leslie Christensen in 2006 based on his belief that students “learn by doing”.



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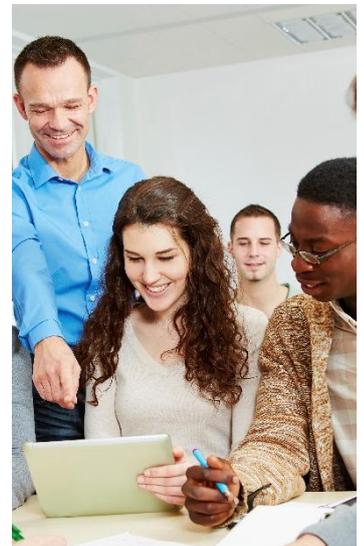
With the intent of embedding digital technology into his teaching Leslie Christensen tested MyEconLab, an online homework, tutorial and assessment product. He reviewed the system and decided that the content, types of exercises as well as reference to theory could be successfully used in his course. He also saw very quickly how he could decrease the time his teaching assistants spent marking papers and lower the department expenses. However, he needed the support of the CBS administration to make it a recommended portion of his teaching. In order to gain the administration's support, Leslie Christensen ran a 1-year pilot with his students and used the data and results to confirm the added value based on grade changes, time saved grading papers and a reduction in teaching assistant staff. Since, MyEconLab a part of the Economics courses run by Professor Christensen; additional digital products are also actively used across the university such as MyMathLab and MyAccountingLab.

The change in instructional design to incorporate MyEconLab provided benefits for both CBS students and the institution. As a result of embedding technology into instruction, CBS saved money and reduced the number of exercise classes from four to two hours per week. At the same time, student contact hours with the subject have not changed as the classes have been replaced with an online solution. In essence, MyEconLab provides students with access to the course content anytime, anywhere, on any device.

Preparing students for Economics courses

Through the use of technology-enhanced teaching, the Economics department at CBS looked at the additional challenges professors faced in the recent years. Professor Christensen noticed that the profile of his students had changed, particularly over the last decade and identified two most important changes affecting his work:

- students finishing high school and entering university were better in group work and project tasks, but their level of Math knowledge appeared to be lower than in the previous years. He found this also to be true for students who had a gap year (or several years) since graduating high school;
- students were born in digital era and raised as digital natives, which appeared to be indicative of student attention span, the way they learn, and the way they want to be taught.



“Great structure of the course: brush up¹, student café, workshop and MyEconLab”

- quote from the student's evaluation forms

¹ Brush up = Math foundation course

To address these issues a Math Foundation Course is now offered as a supplementary course to all CBS newcomers. Approximately 2000 students a year attend the course during the first weekends of academic year. The main goal of the Math Foundation Course is to refresh students' Math knowledge, mitigate their knowledge gaps and ultimately, make students better prepared for the Economics classes. To deliver the course and meet these goals, MyMathLab content, tutorials and assessment is integrated into course structure. Based on the feedback offered in Math Foundation course evaluation forms students appreciated the possibility of upskilling in Maths prior to taking the Economics courses; they also see benefits of the current course structure that incorporates digital learning tools.



The Core Economics Course: Microeconomics

The objective of Microeconomics course is for students to view Economics from a practical perspective. To meet this goal, the instructors focus on offering quality materials and standardized measures of individual progress in learning as an aide to create successfully completion of the course.

The Microeconomics course headed by Leslie Christensen is structured into theory (lecture) and practical application (workshop/ study cafe). Students attend two hours of lectures and two hours of practice each week.

Large lectures are run for about 450 students; study café and workshops are run in small groups of approximately 30 students. The study café is designed for student group work on assignments, homework and MyEconLab, and is facilitated by teaching assistants. Twenty-five percent of time during study café /workshop is devoted to working as a group in MyEconLab. For the rest of the time, students can work on other homework assignments, which include questions from final exams from previous years.

Students complete work both in Danish and English. Their level of English competence is checked during the time of registration at CBS, which requires students to understand academic written texts. This level of English language competence is important, as the homework assigned, including the homework in Microeconomics classes, can be in both Danish and English. The professor also uses the option to include his own questions (in Danish) into the MyEconLab platform, making it more personalised for his students.

“It’s a good idea to combine lectures with exercises, seminars, study café and MyEconLab.”

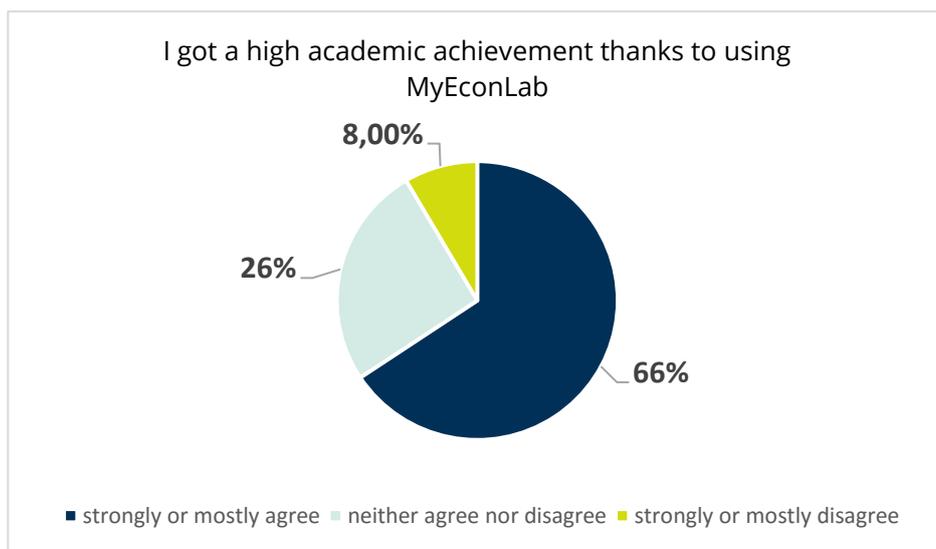
- quote from the student's evaluation forms

Benefits and Challenges of Integrating MyEconLab

The students highlighted certain features in the MyLab as valuable for their learning experience:

- instant feedback,
- possibility to working in groups on the same exercises with different data points,
- unlimited access on various devices.

As stated in their course evaluation forms, students perceive that MyEconLab play an important role in preparation for their overall academic achievement. Specifically, 66% of students agree that they have obtained higher academic achievement due to their use of MyEconLab.



Graph 1 Extract from student's evaluation surveys

Among the benefits of integrating MyEconLab into the course structure, the professor highlights the following features:

- extended number of student contact hours with the subject,
- personalisation of instruction for large cohorts of students,
- personalised feedback on assignment as well as on performance.

“Study café classes allow for work in small groups on homework assignments. It’s the time when students can focus on tasks on MyEconLab as well as questions from exams. During the classes, students are supported by teaching assistants.”

- Leslie Christensen

Professor Christensen believes that regularity of practicing is a key component and that the extended number of contact hours can help students succeed in the course.

Even though MyEconLab is not an obligatory but recommended, the majority of students complete the assigned tasks.

The instructor also highlights the importance of positive feedback on student's performance. Professor Christensen uses the administrator's function within the MyEconLab to send personalised emails to students based on their results and participation level. The aim of this communication is to strengthen the learner's' motivation.

The key to success in this case is not only the innovative use of the digital tools but also the positive feedback included in the message.

Among the challenges experienced in the course of the programme, Professor Christensen enumerates:

- time limitations placed on students for completing the assignments,
- technical issues,
- cultural context in the assignments.

In some cases, students miss the deadline for completing MyEconLab assignments because of the time constraints and other school commitments. Students also sometimes encounter technical difficulties that might be due to product's maintenance periods, which also may have a negative impact on their motivation and engagement with the online tool. Moreover, an important issue when adopting the products in the global locations is its appropriateness of the content for the socio-political and cultural context of students which may have a direct impact on the results.

Professor Christensen sees the need for some improvements in the MyEconLab platform. Among the suggestions, improved graphic design and updated videos (5-6 minutes) to all chapters with different market structures.

“Economics is something you learn by doing.”

- Leslie Christensen

“Personalised emails to students on their achievement is a great motivational tool.”

- Leslie Christensen

“Positive feedback is more motivating than the negative one.”

- Leslie Christensen

Instructor challenges	Solution applied	Benefit for institution
large student numbers, low level of Maths among new students	unlimited practice, instant feedback in the platform, personalised feedback from the instructor	cost reduction, better time allocation

Conclusions

The purpose of this report is to provide a review of a successful institutional experience with technology-enhanced teaching, with particular focus on the observed impact in the courses embedding these technologies as well as on the impact on the 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. Microeconomics course at CBS is an example of a long term implementation of digital learning technologies providing adaptive content through personalized learning solution .

Professor Christensen relied on technology-enhanced teaching in his 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 MyEconLab 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.

“Good correlation between lectures and practice”

“Plenty of opportunities to practices and several different ways to learn things”

- quotes from students' evaluation forms



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