



Pearson



Maastricht
University



MyLab Statistics experience

Interview with Dr Dirk Tempelaar

Platform: **MyLab® Statistics**

School: **Maastricht University, Netherlands**

2023



Pearson



“The weaker students, especially, profit from the fact that a problem they cannot directly solve will be explained by the tool step-by-step, indicating how they can solve it. They are then in the position to be able to do it themselves.” – Dr Dirk Tempelaar



Basic information about the course

I teach two different courses. One is an introductory course Mathematics & Statistics, taught to **all first-year students** immediately after arriving at the university. It's their very first course as soon as they enter their new bachelor programs. It's a course taught to a large number of students – both in **Business and Economics**.

The enrolment this year is **1400 students**, and the large majority of them use MyLab® Statistics. We apply **blended learning, with problem-based learning** as the face-to-face mode and several different resources for the self-study mode. We stimulate students to use MyLab for their self-study and have success doing so: more than 1200 opted to prepare for their sessions with MyLab.

How long have you been using MyLab Stats?

I think about 20 years by now.

What did you want to achieve with MyLab Statistics in your course?

I wanted to **allow students to come to the same level** when entering these tutorial sessions. I wanted all students to **be active participants** in these discussions and be able to solve more advanced problems. I also wanted them to come to the same level without having the need to have class sessions to bring them to that same level.

So, it's self-regulated independent learning by students in their preparation for tutorial sessions.

And since students have vastly diverse backgrounds, they have quite **different prior knowledge**. You need these digital tools in order to have them prepared and independent in a self-regulated way.



Pearson



Challenges in teaching – prior knowledge

The major issue for my teaching is that because it's a first-year introductory course, **the inflow of students is very diverse**. We have a very strong international student inflow: 75% are international students from neighbouring countries but also from many other countries. We have 98 different nationalities in our student body.

All of these students have extremely different types of high school experience and prior knowledge. Some have a good background in Statistics and Mathematics, which is essentially what my course is about.

In Holland, there is a Dutch organisation that compares high school diplomas all over the world and decides which students are admissible. But even if they are admissible, there's still a huge difference and diversity in prior knowledge.

Moreover, there is a group of students who don't meet the requirements but are allowed to enter university if they take some special exams.

We have this system of problem-based learning as a specific form of flipped classroom. Typically, for more advanced problems, students in small groups try to solve those problems. We ask students to prepare for those sessions, especially in order to prevent the phenomena of silent listeners and have only students with a good background in Statistics solving all the problems.

That's the flipping aspect when preparing these sessions.

MyLab plays a key role. Students prepare for the sessions by reading literature, but in order to practice what they have read in the literature, they use MyLab.

This is the flipped classroom approach we have, and MyLab is especially important. We also use it for quizzes.

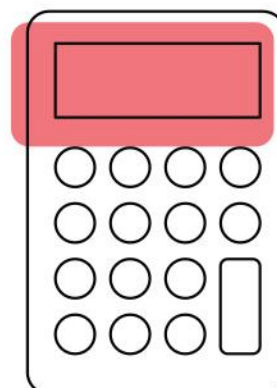
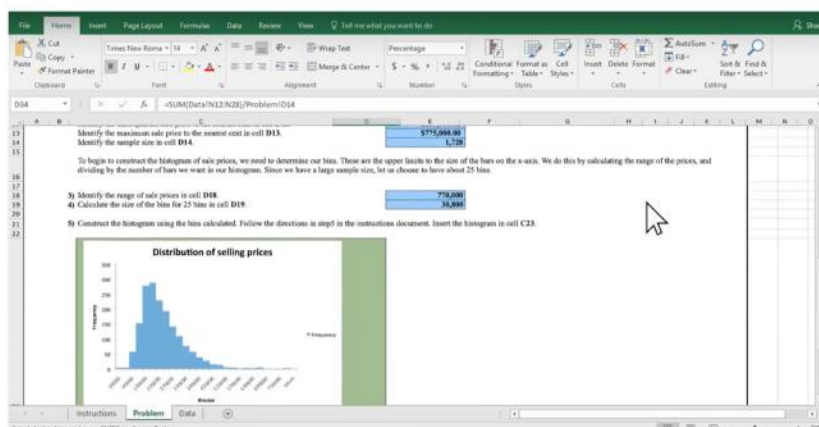
Students will take the quizzes outside MyLab in order to allow those without a license to also participate. I generate the quiz questions based on MyLab.

Which features do you offer your students to use as recommended learning, and what do you give them as compulsory to use?

We don't give them any material as compulsory. But what we do is, we have the homework. In fact, we primarily use the homework. With this homework, we stimulate students to use them. First, we have the quizzes. Quizzes are based on these tests. **So, the content is very similar to what they see in the homework and quizzes.**

The weight of the quizzes is about 15%. Students try to do their best in those quizzes. We have these quizzes and then if students do not do well in the quiz, they can compensate that to a certain extent with the homework scores.

First, homework is the most important to prepare cases. And second, to compensate for the course as well, to some extent.



"You need a little bit of extrinsic motivation for students to help them start learning about certain topics."



Pearson



Are you using the preset exercises?

Homework exercises are a selection of the exercises made by the authors. We spent a lot of time looking for textbooks and ***we chose the textbook we are using, because of the high quality of the exercises.*** We use those exercises for our homework.

How do you assign credit and why did you make that decision?

We assign 15% credit for quizzes. In fact, what we would like to have is a pure formative way of getting feedback to students. But if you're using MyLab only in a pure formative way, then student participation is always rather low.

We need extrinsic stimulation to participate in these assignments. It seems that even for such low credits of 15% of the final score, they are willing to work well for the quiz. So, if they write the quizzes very well, 15% is their quiz score. If they are not doing the quizzes very well, then they can compensate for that by the mastery score. So, the 15% is the quiz plus mastery score.

That's what students need to feel pressed to participate in this.

That sounds like a very good way of engaging your students and motivating them to learn more.

It's an old discussion in education about what is the role of extrinsic motivation and what is the role of intrinsic motivation. ***I'm from a school where you can build intrinsic motivation by starting with extrinsic motivation first, then showing students there is an interesting topic, and the intrinsic motivation will grow from there.*** I know there are also people who would just reason the other way around – that if you're using extrinsic motivation it might drive to intrinsic motivation. So, there are a lot of different things to discuss about my experience in all these years. You need a little bit of extrinsic motivation for students to help them start learning about certain topics.

How do you communicate this to your students?

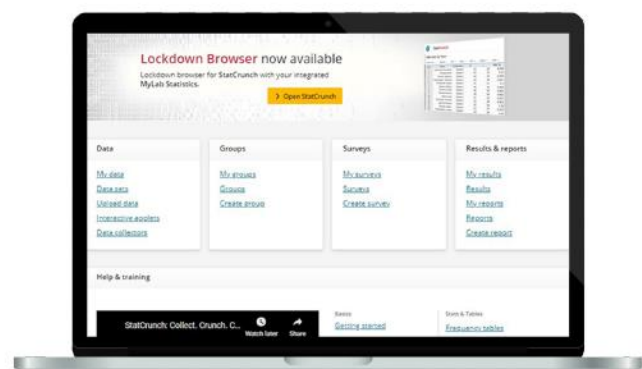
I'm also teaching in what we call summer courses. Even before students start in September, we offer them some more courses to help them bring up their school level. There are also some courses focusing on mathematics.

I have a lot of contact with most of the students because out of these 1,200 students, about 800 participate in the summer classes, therefore we have already had discussions during the summer. I also mention to them that we are now using digital tools for the summer courses, and we'll continue to use these digital tools in the first course.

I explain that the way they use them in the summer course is similar to the way they will be using them in the main course. So, they have the background of participating in these summer courses, knowing how to work with these digital tools and how these tools can help them come to the proper level.

Do you regularly communicate the use of MyLab Statistics tests? Do you call to their attention that there is homework in there or a quiz coming up?

Yes. We use common files in the learning management system where they have their agenda. They already know at the start of the course exactly when the quiz takes place, what the most important dates are and that they must do mastery in MyLab – which will be, in fact, downloaded for their records.



"It is beneficial to give a mixture of formative and summative assessments. This is especially helpful to students, as it brings them to the rhythm of studying every week."



Pearson



What did you find is the main benefit of using MyLab Statistics in your course?

Typically, if you are using more forms of assessment and formative assessments, students don't have to wait until the last week of the course, but in fact, start in week two as in my case, and what you see is that you help the weaker students. Stronger students always manage to pass your course.

But what we see is that the weaker students especially have a better chance of passing the course.

Then, when you have a more traditional course, where you must provide only formative assessments, and the single summative assessment taking place is the final exam. It is beneficial to give a mixture of formative and summative assessments.

This is especially helpful to students, as it brings them to the rhythm of studying every week and not postponing it. It also brings them a lot of feedback in terms of their progress. ***We also see students profit from the fact that the digital tools have this system of worked examples or example-based pedagogy.*** The weaker students, especially, profit from the fact that a problem they cannot directly solve will be explained by the tool step-by-step, indicating how they can solve it. They are then in the position to be able to do it themselves.

Part of my research is called *"Learning by Worked Examples"*. What you see is that a certain type of student especially profits the most from it.

Are you getting any feedback from your students about using MyLab Statistics?

We get a lot of feedback.

In my course, I have 85 different sections. It's impossible to find instructors for all those sections. So, **we have second-year student tutors coaching those tutorial groups in the first year.** A lot of my time and energy goes into the selection process of these second-year students who become student tutors. Every year we have more than 100 interviews to find around 80 student tutors. The typical question is, *"If you were sitting in my chair, how would you design this course? What instruments would you use? What tools would you keep, and what tools would you throw out?"* Then, we always have a discussion.

I think a large majority are in favour of digital tools. Several students would like more differentiation, but that's quite a challenging task. So, to achieve full mastery, I require them to do exercises and homework.

Some say, *"I can do with less, but still want to have full mastery."* Some, however, protest, *"Why can't we have less exercises?"* But that's marginal feedback. ***Most of them like it very much, so we'll certainly keep it in the course.***

If you'd like to know more about MyLab®, please visit our website:
<https://www.pearson.com/en-gb/higher-education/products-services/mylab.html>

