



**TRINITY  
COLLEGE  
DUBLIN  
CASE STUDY**

McGraw-Hill

## Case Study Facts

**Course:** Introduction to Statistics (Undergraduate)

**Instructor:** Alejandra Ramos



**Digital Product in Use:** Connect with SmartBook for *Business Statistics: Communicating with Numbers*, by Jaggia and Kelly

**Number of Students:** 350



Connect is an online platform using adaptive digital technology to deliver a more effective learning experience for both students and educators.

As a leading university in Ireland, Trinity is recognised for academic excellence and a transformative student experience. It prides itself on a diverse, interdisciplinary, inclusive environment which nurtures innovation and creativity. With a tradition of independent scholarship spanning more than four centuries, Trinity is home to talented and inquiring minds, a liberal education, and research conducted at the frontiers of disciplines.

### The Story / The Challenge

This course is a compulsory one for students of Business, Economics and Social Science (BESS) and Philosophy, Political Science, Economics and Sociology (PPES). With 350 students in her cohort, Alejandra was very aware of the broad range of interest across her students, some of whom have never taken a statistics core and were more interested in acquiring a background in social science. She recognised that this was a challenge and sought to build an environment true to the mission statement of Trinity: an environment that was inclusive, innovative and creative.

Another key driver in creating her course was Alejandra's fundamental desire to set up her fresher students—brand new to university—with the skills needed to succeed in their journey through university and beyond. "It's the role of the educator to build these autonomous learning skills," explained Alejandra, adding, "My students are just out of high school, and they don't yet have the right study habits so it's important to get them on track from the very beginning."

### The Solution

When the McGraw-Hill representative explained what SmartBook could do, Alejandra was immediately taken with it for its focus on student learning and its capacity to create good study habits. "I liked the idea of continuous assessment online as it helped me to keep track of student performance while it freed up my time spent marking and meant I could focus on my research," commented Alejandra. The pre-reading aspect of Connect was also exciting for Alejandra. She ensures her students come to the lectures prepared by setting them chapters to read online, for which students then receive marks for. Indeed, students in her cohort are given 10% of their final mark for the reading ahead of the lectures.

Looking briefly at course set-up, a further percentage is also given to students who engage with Connect. In Alejandra's own

words: “The course is broken down into nine topics. For each topic, there is a pre-reading which needs to be completed before the corresponding lecture. Then in the lecture, there is a focus on analysis. In a subsequent lecture we will look at examples together, and then the students have their tutorials where they prepare their homework.

After that, the students take an online quiz. By the time the students are doing the quiz, they’ll be doing the reading for the next topic which really encourages them to connect the topics. The weekly quizzes are 10% of the grade. And I randomly mark one of their pieces of homework. There is also a mid-term test done online which is 10% of the grade and done within Connect. 40% of the final mark is done via continuous assessment.”

Seeking to build engagement for online learning with her students, Alejandra explains her strategy. “At Trinity, the pass rate is 40%, so I let students know that if they do the continuous assessment and go through the readings I set, they will automatically pass the course...”

“This was really helpful for students who I know do not react well to the pressure of the final exam or are not very motivated to take the course!”

## The Results

Her strategy has definitely struck a chord! Not only has Alejandra received a nomination for the “Provost’s Teaching Award” (something very salient at her account), but the feedback she solicits from her students also speaks volumes, on top of a rise in quiz scores.

On the nomination, Alejandra comments, “It is great to see that the students appreciate it.” And on the feedback, Alejandra explains that she was keen to understand from her students which aspects of the course they enjoyed the most. At the middle of the first year teaching the course, she asked her students to let her know the one learning material of the course they had enjoyed the most. With 30% of the votes, it was the pre-reading that was considered the most popular. Soliciting further feedback from her cohort, it was also apparent that her students would

appreciate more 1:1 time with her. “They were looking for personalised feedback.”

With that in mind, Alejandra opted to flip her classroom in the second year of teaching her course. Alejandra explains what her current set-up looks like.

“Now my students get their reading done ahead of time, and we have one lecture where we focus on working out problems together. This affords me closer interactions with my students, and I can see the challenges they face and the things they are struggling with. Students are also more likely to participate.”

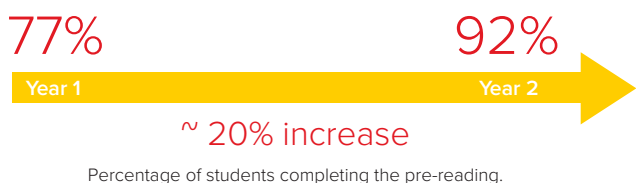
Explaining the importance of embedding Connect within her course to her flipping the classroom, Alejandra commented, “Without the pre-reading, I could not possibly have had the time to flip the classroom.”

A nomination for a teaching award, and flipping her classroom are two hefty achievements in themselves, but the data Alejandra has analysed is also pleasing to note.

## Data

### Insight: Engagement with the pre-reading

Alejandra saw high engagement with the pre-reading from 95% of students engaging with it in her first year, and 100% engaging with it in her second. “There was not a single student who did not engage.” In terms of completion of the pre-reading, “In the first year, it was 77%, and in the second it was 92%. So it is fair to say almost all of the students are reading ahead of class.” Year on year, this is a rise in completed pre-reading of just under 20%.



## Insight: Weekly Quizzes

The average mark for the quizzes, went from 54% in the first year to 67% in the second, and that increase was even more of an achievement as Alejandra explained she adapted the quiz in the second year to be more difficult.



Alejandra also found there to be a strong correlation between the quizzes and final student mark.

“The quizzes are a good indicator of final mark so it’s great to see this rise year-on-year, despite me making the quizzes harder.”<sup>1</sup>

## Further Successes

Reflecting on the course she created, Alejandra also shared a number of additional insights.

### Implementation

The first centres around implementation and ease-of-use. Alejandra said she was delighted with the ease of setting up the course and copying it over to the second year.

Additionally, she noted that it was only a small portion of her students who experienced any issues with getting registered to begin with, and that all of those issues were resolved promptly by McGraw-Hill.

### Exam Security

A slight concern Alejandra had was around the quizzes and mid-term test, a prominent part of the course, and whether students could be working together to answer the questions.

Her McGraw-Hill representative was able to put her in touch with another customer of the same course who spoke with her about her concerns, having faced similar issues around exam security, and introduced her to the algorithmic questions feature found in Connect.

This means that it becomes highly unlikely for students to get the same questions and alleviates the capacity for students to partner together.

### Sustainability

A final reflection Alejandra offered was around sustainability and environmental responsibility, and the fact that students don’t need to use print textbooks which are then often discarded once the course has completed. “The students appreciate this and really value it.”

## Conclusion

Building a course based on student feedback has definitely been a success for Alejandra with an award nomination under her belt, rises in performance, and boxes ticked in terms of implementation and ease-of-use.

**For more information on Connect and SmartBook,  
please visit [mheducation.co.uk](https://mheducation.co.uk)**

<sup>1</sup> Please note that we are not able to report on final marks in this case study, but that the correlation between the quizzes and the final course mark was 68%.

We are a learning science company that is driven by a vision to help unlock the full potential of each learner.

At McGraw-Hill, we believe our contribution to creating a brighter future lies with our deep understanding of how learning happens and how the mind develops. Based on this, we develop methods to make the learning process more effective, and we apply all of this to creating digital and print solutions that empower educators and propel learners on a path toward success.