



The University of Sharjah, United Arab Emirates



WileyPLUS, E-Texts



Course – Physics



Number of Students – 600 to 2,000

Approach / Background

The University of Sharjah is an Emirati private national university located in University City, Sharjah, United Arab Emirates. The Department of Applied Physics & Astronomy delivers a Bachelor Degree in Applied Physics covering four streams: nuclear; medical; environmental and computational physics.

Wiley has been working with the department for over six years. Initially, approx. 600 students were purchasing the print edition of Physics by John D. Cutnell, Kenneth W. Johnson, David Young and Shane Stadler.

The University of Sharjah explored how best to integrate WileyPlus content into Blackboard and provide students with better access, across locations. Working collaboratively, Wiley and the university developed an effective digital solution whilst also considering how best to migrate to a centralised purchasing model.

Setting / Rationalise for the Trial

The University of Sharjah rapidly integrated WileyPLUS E-Text content within the Blackboard Learn™ experience which enabled faculty to better engage with students. Lecturers were able to set automated homework assignments, identify and monitor different kinds of questions, use video and add value to marking.

After six months, faculty introduced additional content from a calc-based physics course by providing Fundamentals of Physics Extended by David Halliday, Robert Resnick and Jearl Walker. The content was designed to better engage over 2,000 students and to encourage and support critical thinking.

Resources Used / The Trial

The central purchasing option offered by Wiley enabled The University of Sharjah to make volume purchases across disciplines which means that as an institution they can benefit from better prices and terms.

Faculty used a number of WileyPLUS tools to assist with the questions by adding hints in the form of animation, video or simulation tools. Students used e-Text links aligned to the material the question was assessing. Faculty would like to increase the use of analytics to collect data which will be correlated with institutional data to identify the key pain points for students and will be fundamental in improving the overall outcomes.

“With the migration to online homework and quiz management also came the added advantage of the availability of large amounts of student data and the use of analytics. This is being hailed as a huge asset for people doing educational research and we ourselves are eager to take advantage of that.”

**Najeh M Jisrawi (Zarir),
Associate Professor of Physics Applied,
Department of Applied Physics & Astronomy,
Sharjah, UAE**



Evaluation – Instructors

Wiley offered The University of Sharjah a centralised purchasing option via their Virtual Learning Environment (VLE) which relieved faculty of the administrative burden of issuing individual codes and significantly streamlined the implementation process, helping free up valuable lecturer time to focus on issues such as course mapping and marking.

Evaluation – Students

It is evident from some preliminary analysis that WileyPLUS is a useful monitoring tool. Faculty analysed student usage and the impact of WileyPLUS. Not surprisingly, it revealed that students who spend more time on their homework achieve better grades.

“The decision to use WileyPLUS across the physics curriculum has been a game changer! Not only were we able to enhance our reach and diversify our tools and content, but could engage the large number of students in ways that were not possible before.”

**Najeh M Jisrawi (Zarir),
Associate Professor of Physics Applied,
Department of Applied Physics & Astronomy,
Sharjah, UAE**



Fig. 1

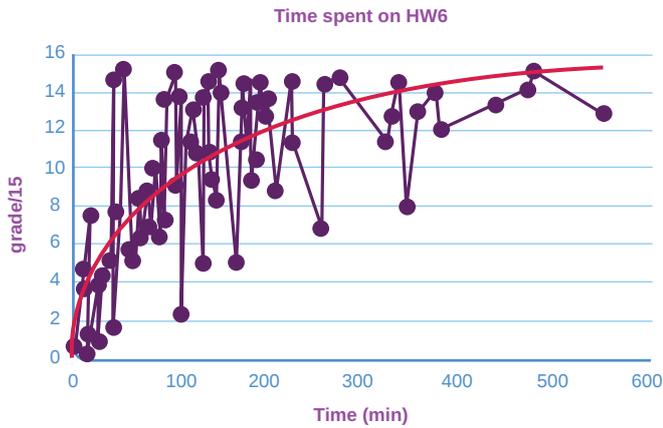
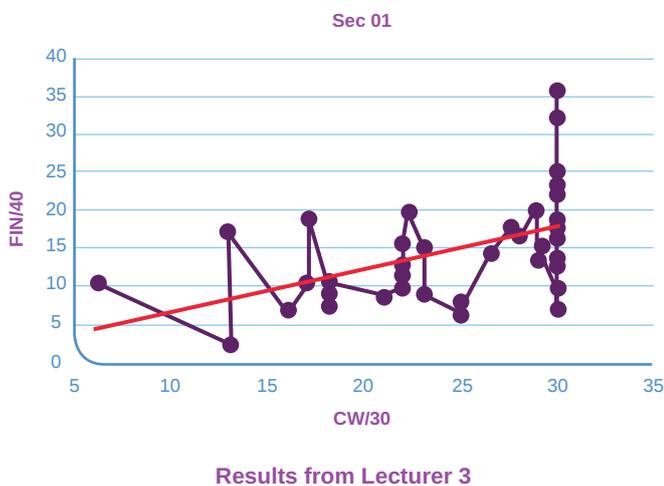
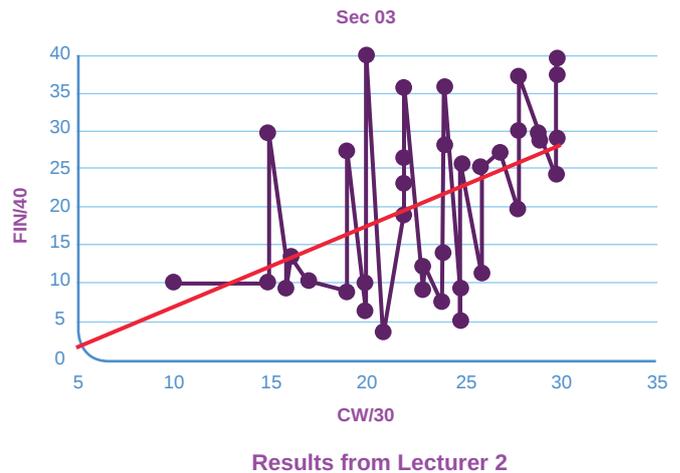
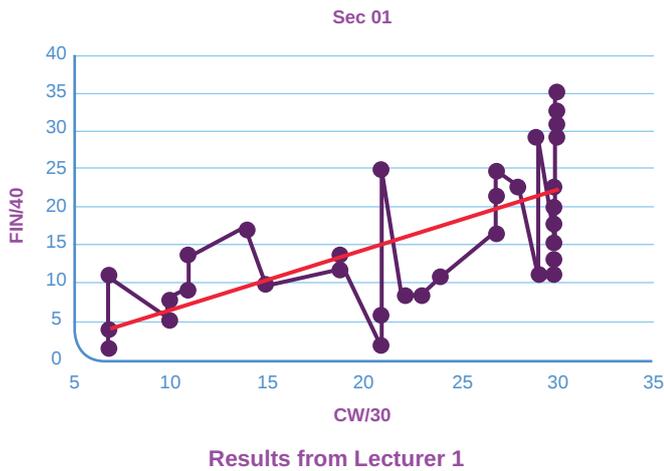


Fig. 1 shows a plot of student grades versus time spent in minutes on homework drawn from 15 problems. It demonstrates that students needed to spend at least two hours to get a decent grade. The bubble doubts that a mere 40 minutes spent on the homework would result in such a high grade. The average time spent by all 93 students who attempted the homework is 150 minutes and the median time is 135.

Source: *The University of Sharjah, February 2016*

Fig. 2

Final grade performance using three sets of data from three different lecturers showing correlation between homework (WileyPLUS) and grade on final exam.



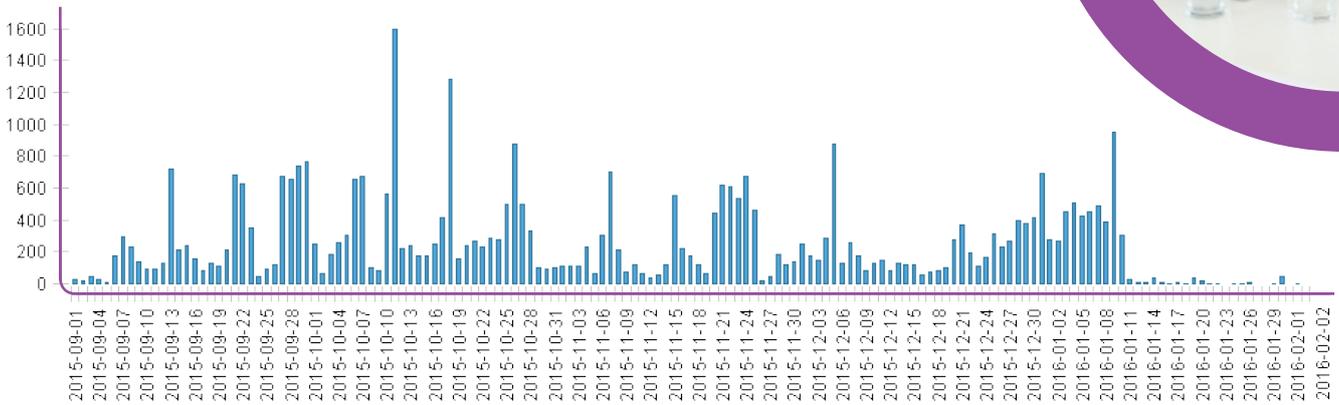
The three plots (left and above) are for the course work which is 50% WileyPLUS homework and 50% in class paper-based quizzes. The red trend lines in each case indicate that generally working enough on the homework is rewarded by a reasonable increase on final exam grade.

Source: *The University of Sharjah, February 2016*



Fig. 3

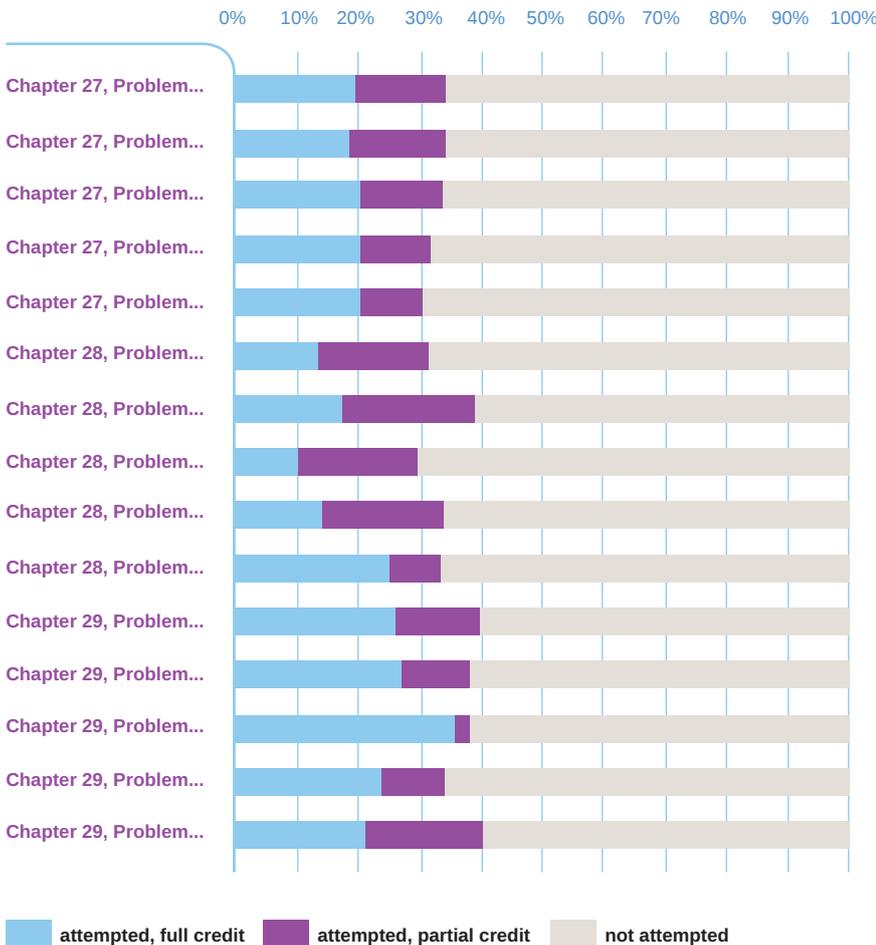
Shows that access is periodic and peaks around homework deadlines or examination times.



The above clearly shows that October 25th and November 25th were the dates of the first and the second mid-terms, respectively!

Fig. 4

The bar graph below is taken directly from WileyPLUS and shows student success in answering various problems.



SUMMARY

WileyPLUS enabled lecturers to diagnose early, facilitate engagement and measure outcomes in real time. The University of Sharjah is currently considering how best to trial WileyPLUS in other disciplines to potentially include calculus and algebra courses for mathematics and engineering. It is also considering how best to use campus wide analytics tools which could be integrated with Blackboard Learn™.

Source: The University of Sharjah, February 2016