

INVESTIGATING THE STUDY HABITS THAT LEAD TO SUCCESS IN FIRST YEAR CHEMISTRY

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SUBTHEME: Modes of Learning

BACKGROUND AND AIMS

To improve our teaching, we need to understand our students better. Our perception of the students we teach is that they rely heavily on past exam papers, they have poor time-management that leads to cramming, and they gain superficial understandings of the material that we expect them to know.

We are working through a process to transform our teaching practices, aiming to offer teaching materials and modes that promote effective learning practices, and will build on our students' existing learning strategies. This study aims to gain more nuance in the picture we have of our students' approaches to learning, so that we can identify the best techniques and encourage their use, as well as set up first year students with skills that will lead to success in later years.

DESIGN AND METHODS

Our research has studied over 500 students and academics via a combination of surveys, interviews, and observations. This data collection has taken place from July 2023 to June 2024.

From this data, we will present results from a mixed methods study that included a large student survey (n = 237), a longitudinal student study (n = 30) and interviews and observations of academics (n = 7). We adapted the Classroom Observation Protocol for Undergraduate Students (Smith et al., 2013) for the observational part of the study for a quantitative analysis of teaching behavior.

RESULTS AND CONCLUSIONS

We have categorized the sample of students according to their high school and tertiary results. Surprisingly, students who performed very well in secondary school are the least likely to attend university lectures. We also found that there was a statistically significant relationship (p-value < 0.00001) between the exam mark students expected to achieve and their actual result. The student interviews have revealed a huge diversity of study practices among high-achieving students, and students with lower exam scores relying far more on the University-provided material for their study.

In our longitudinal study, we unexpectedly found a very low correlation between exam marks and rates of attendance at any kinds of our classes. Participants were able to obtain very high marks, despite having low attendance rates and minimal interaction with teaching staff. Conversely, others attended many classes and received quite low exam marks.

We have used these findings and the results from our lecturer interviews and classroom observations to heavily modify a subject that will run for the first time in Semester 1 2025. We will also report on the subject design and the way these results have influenced this design.

REFERENCES

Smith, M. K., Jones, F. H. M., Gilbert S. L., Wieman, C. E. (2013) The Classroom Observation Protocol for Undergraduate Students (COPUS): A New Instrument to Characterise University STEM Classroom Practices. *Life Sciences Education*, 12(4), 618-627.

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