Meet the researcher

Turning Student Feedback into Data Insights for Mathematics Education

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(early-career researcher)

Collaborating Institutions:

Dublin (Ireland)
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Sheffield (UK)

The challenge

University students around the world often struggle with similar mathematical concepts. From solving equations to understanding calculus and statistics, many students face difficulties that hinder their progress. Traditional feedback systems collect large amounts of comments, but the data is unstructured and difficult to interpret at scale.

The solution

An international study analysed thousands of pieces of student feedback from mathematics support centres in Ireland, the UK, and Australia. Instead of reading each comment manually, the researchers applied natural language processing to uncover patterns and group related topics.

Why it matters

Universal challenges The findings showed that students across countries share strikingly similar difficulties.

Actionable insights Identifying the most common stumbling blocks helps support centres focus their teaching where it is needed most.

Scalable approach Text-mining allows institutions to process years of feedback efficiently and continuously improve student support.

Research contribution

Dr Gizem Intepe played a central role in processing and analysing the Australian dataset. Using the R programming language, she developed text-mining methods to identify recurring themes in student feedback, cluster similar comments, and present key problem areas through visualisations from word clouds to dendrograms.

The impact

Gizem's approach transformed thousands of unstructured comments into clear insights. It demonstrates how advanced data analysis can strengthen mathematics education, making learning support more targeted, efficient, and responsive to student needs worldwide.