Investigating factors that could improve equitable outcomes in Organic Chemistry exams.

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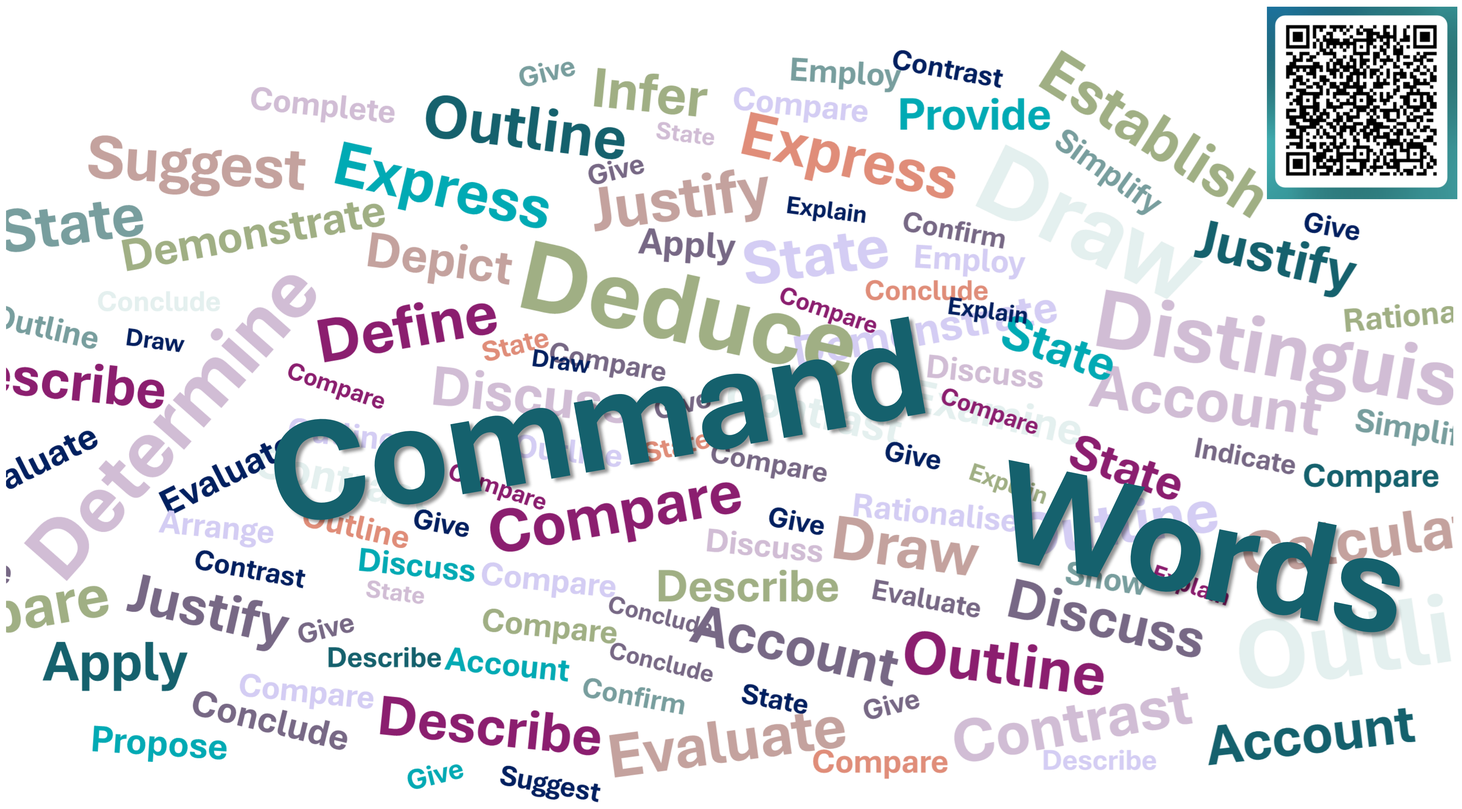
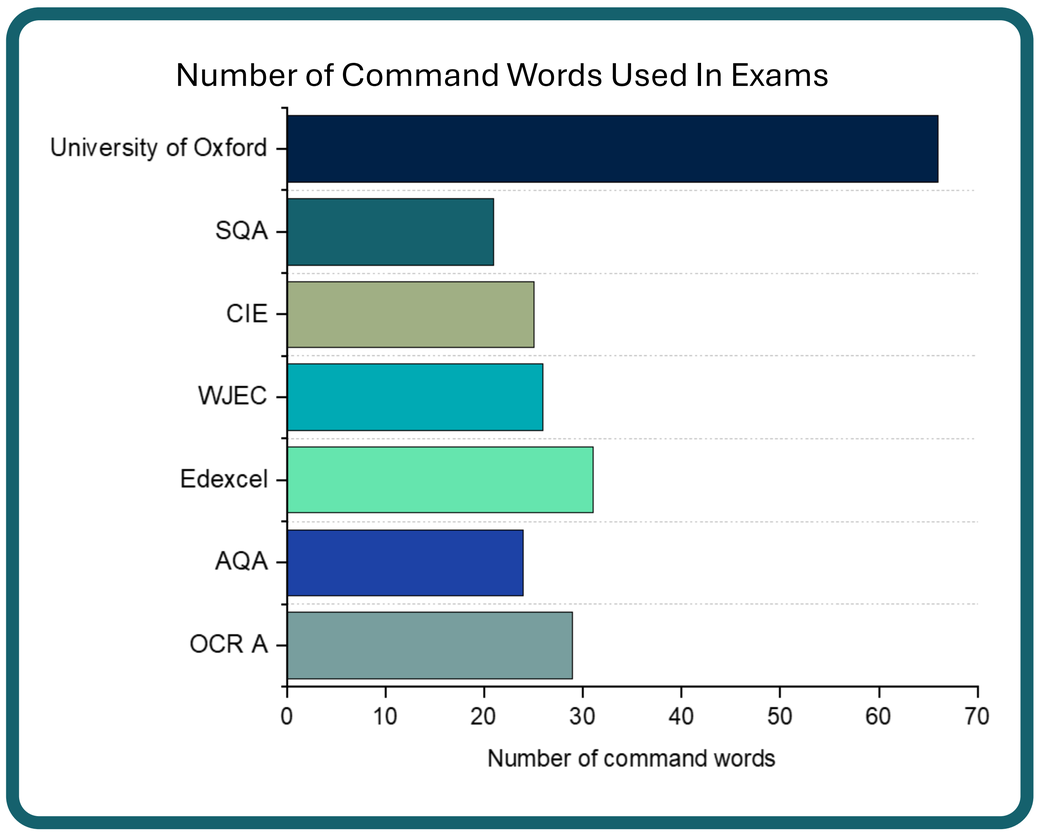
Growing discussion surrounds the efficacy of traditional high-stakes summative exams and their potential contribution to gender gaps and challenges for neurodivergent students. This study investigated student perceptions of different assessment styles through multi-institutional surveys and interviews with students and academics.

Does the style and wording of exam questions influence students' approach and performance?

Command words are 'words or phrases' used in exams and other assessment tasks that tell students how they should answer the question.

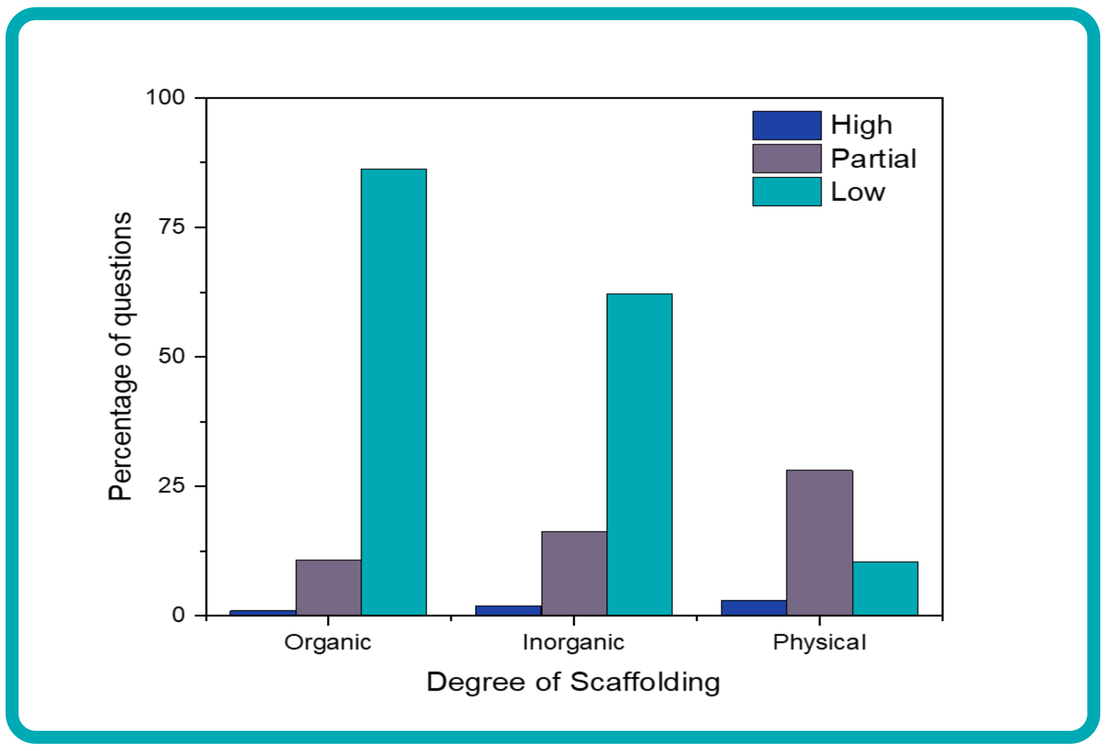




Conceptual understanding of command words varied amongst assessors, highlighting a need to improve standardisation to avoid confusion amongst both students and assessors.

Does the style of questions have a greater impact on certain demographic groups?

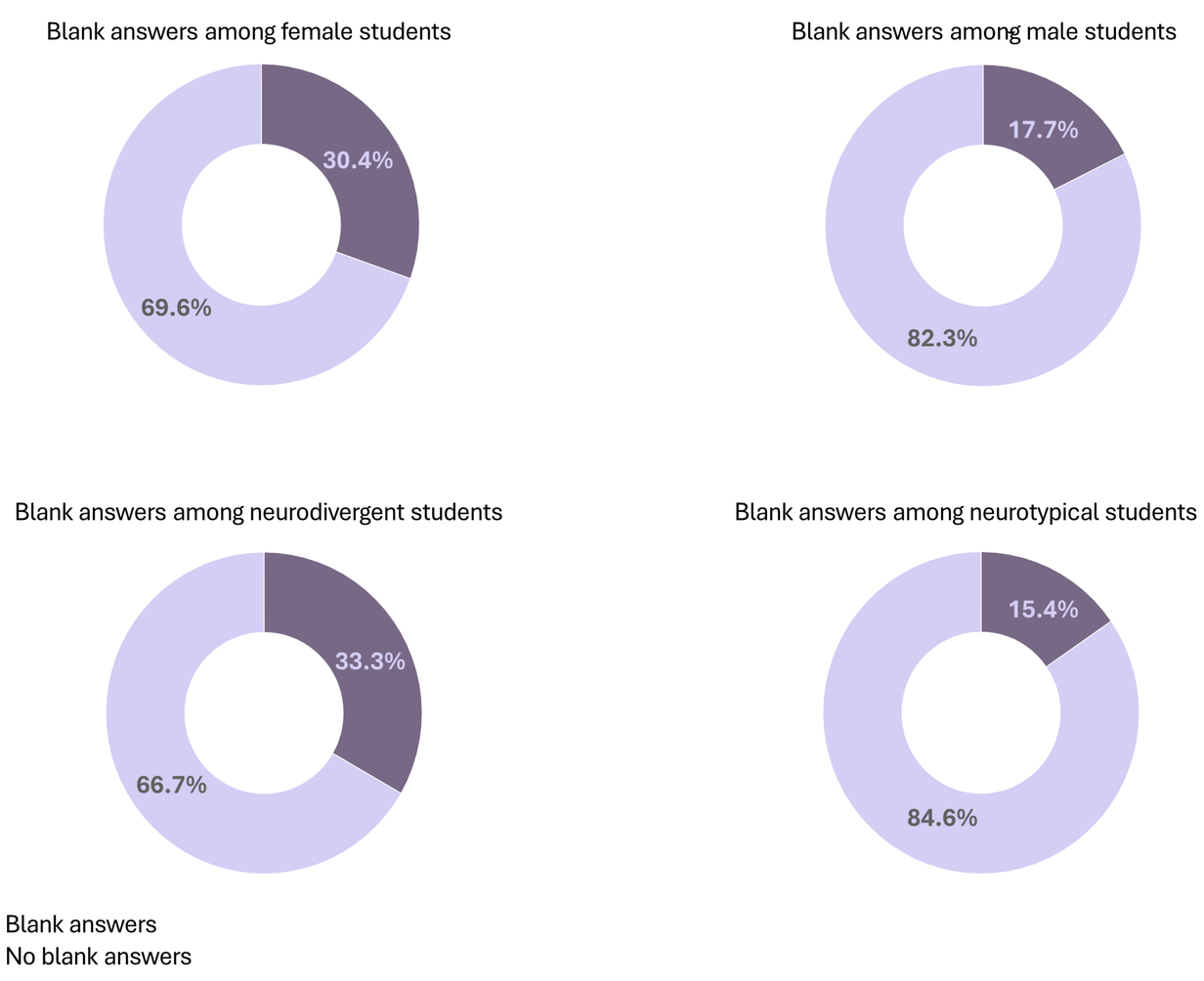
Scaffolding is an emerging strategy within higher education which helps performance by building confidence.[1]



A highly scaffolded question is broken down into smaller more manageable parts, starting with easier definition questions, followed by applications of these concepts. The students are guided through a problem which increases in difficulty.

The lack of scaffolding in Organic Chemistry exams could be a contributor to gender awarding gaps.[2]

Volunteer students were randomly assigned equivalent mock exam questions in Organic Chemistry that varied in their level of scaffolding.



This allowed for an exploration of student approaches and perceptions of different question styles by demographic.

References:

1. V. Gibson, L. Jardine-Wright and E. Bateman, *Eur. J. Phys.*, 2015, 36, 045014.
2. H. Dawkins, H. Hedgeland and S. Jordan, *Phys. Rev. Phys. Educ. Res.*, 2017, 13, 020117.