TWO-STAGING A COMEBACK: A REVIEW OF TWO-STAGE EXAMS FROM 1996 TO 2022

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BACKGROUND
Two-stage examinations are an alternative to a traditional examination, where an individual examination is followed by a group examination, often on the same questions. With pandemic remote learning leading to a re-assessment of examination formats, we investigated previous research on two-stage exams to understand how these assessments have been delivered and received by students, and we make suggestions based on this research and our own experience for how to deliver these exams in a large-cohort introductory biology unit. This research was published in the International Journal of Innovation in Science and Mathematics Educations (IJISME; Lee et al., 2022).

AIMS
We aimed to investigate trends in how two-stage exams were set, their discipline context, student performance and the student experience in studies published in the last ~25 years.

DESIGN AND METHODS
We performed a narrative literature review of research papers involving the use of two-stage examinations in STEM, from 1996 to 2022. We extracted from the 39 included studies data about the discipline, the weighting and timing of the group component, the type of questions asked, how groups were formed and the cohort size. We also extracted data on the student's response: whether scores were higher in the group component, whether the exam improved understanding or retention, whether students favoured the format and whether stress was alleviated.

RESULTS
Trends were identified, with most surveyed exams using multiple-choice questions that were the same in the individual and the group component. Student feedback was very positive, and group component marks were almost always higher than individual component marks. However, results varied on improved understanding and reduction in stress, and few studies tested these factors.

CONCLUSIONS
Two-stage exams are well received by students, and group exams increase performance relative to individual exams. Further research is needed into measurable beneficial effects from the format. We provide our suggestions for implementing these examinations in a large introductory biology unit.

REFERENCE
Lee, T. R. C., Pye, M., Lilje, O., Nguyen, H. D., Hockey, S., de Bruyn, M. and can den Berg, F. T. (2022) Two-stage examinations in STEM: A narrative literature review. *International Journal of Innovation in Science and Mathematics Education, 30*(5), 73-90.

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