The validity of unproctored online exams is undermined by cheating

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I write regarding *"Unproctored online exams provide meaningful assessment of student learning"* by Chan and Ahn (1). I propose an alternative view—that unproctored online exams are not meaningful due to their inherent insecurity.

Chan and Ahn use a natural experiment to test for correlations in scores from in-person proctored exams (pre-pandemic) and online unproctored exams (taken by the same students, during lockdown). Strong, linear correlations are found. The authors state, "…*an important implication of these data is that cheating was perhaps uncommon when students took their online exams".*

This contrasts with studies where students are actually asked whether they cheated during online exams. I have reviewed these with a coauthor and found that many students report cheating, roughly a quarter, and this doubled during lockdown (2). Chan and Ahn cite our review as "limited" evidence that cheating is increasing. There are certainly limitations with self-report studies of challenging behaviors such as cheating, but these are generally associated with an *under*estimation of the behavior (3).

If, as proposed here, cheating was widespread and undermined the validity of online unproctored exams, then this would be visible as an inflation of student scores. The authors actually provide evidence for this in their supplementary materials. The size of this "grade inflation" is reported as $g = 0.4$, (or 0.7 when considering multiple-choice questions). These are large effect sizes for educational interventions (4). Chan and Ahn propose that improved performance on online unproctored exams is caused by factors other than cheating, specifically, reduced anxiety caused by sitting the exams at home, online, and unproctored. There is evidence that this was associated with reduced stress for some students, even during a global pandemic, but this is balanced by the stress of finding somewhere quiet to take the exam, with a reliable internet connection (5). Regardless, for this to lead to an increase of $g = 0.7$ on MCQs would be remarkable. The authors also propose that *"instructors might be more inclined to deploy multiple-choice than short-answer or essay questions in online exams relative to in-person exams…. multiple-choice questions are easier* [so]*….scores on the online exams can be expected to increase relative to in-person exams".* The authors provide no evidence for this.

Finally, a major contributor to the likelihood of students engaging in cheating is simply the ease with which it can be committed (2, 6). It is clearly easier to cheat in unproctored online exams than in proctored, in-person exams.

I propose that the most parsimonious interpretation of the supplementary data provided by the authors, in light of the broader literature on the topic, is that cheating increased substantially in unproctored online exams. The authors acknowledge that this is an interpretation of their findings, albeit less likely (in their view).

This issue is acutely important due to the emergence of tools such as ChatGPT, which would make it even easier to cheat in unproctored exams (7). Thus, the basic validity of online, unproctored summative exams is questionable, and they should be avoided.

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