CRITICAL / PRACTICE NOTES

The MCQ Paper Exam in the Age of AI?

Keeping large-cohort multiple-choice assessment secure, scalable and automatically marked

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The provocation

Multiple-choice questionnaires promise an efficient way to assess large cohorts: questions are readily administered, answers can be marked automatically and results returned quickly. But an apparent solution to the logistical problem creates another. When 150 students answer on unrestricted laptops or phones, the very devices used to take the assessment can also provide access to generative AI capable of answering the questions. Returning to paper may seem the only credible way to assess independent knowledge, at the cost of laborious hand-marking. Is this really a choice between insecure digital convenience and secure manual work? Perhaps the more useful distinction is between the conditions in which students give their answers and the technology used to process those answers.

The critical question

How might an academic conduct an invigilated MCQ assessment for 150 students in an ordinary teaching room, limiting unauthorised AI access while retaining the efficiency of automated marking?

What the research suggests

Three recent studies suggest that a computer laboratory is not essential to efficient, controlled assessment. Hernández-Mier et al. (2025, pp. 1, 22–24) evaluated optical mark recognition (OMR) on 6,029 printed examinations comprising 564,040 answers. Their system classified 99.95% of individual responses correctly, but only 96.15% of whole answer sheets without an error: scanning is efficient, not infallible. Crucially, this study did not test Moodle Offline Quiz itself. Caro et al. (2025, pp. 1516–1517, 1520–1521) describe Moodle with Safe Exam Browser (SEB) in data-analysis courses involving examination sessions of approximately 400–500 students; restricting permitted sites and applications can preserve a digital workflow without granting unrestricted web access. Presutti et al. (2025, pp. 124–126) document a University of Turin bring-your-own-device (BYOD) Moodle–SEB examination trial, including institutional Wi-Fi restrictions, invigilation and practical compatibility problems. Both SEB studies are implementation accounts, not controlled demonstrations that cheating was eliminated. Together they point to two viable design routes rather than an AI-proof question type.

An approach to try

Assume the institution has enabled and configured Moodle Offline Quiz and Moodle Quiz with SEB. Both approaches use the Moodle question bank and retain automated processing; the choice concerns how students provide their answers. In either case, explain the permitted resources, arrange appropriate invigilation, test the complete workflow in advance and specify a process for exceptional cases. These are alternative approaches, not consecutive stages.

01 PRINT, RESPOND, SCAN — Moodle Offline Quiz. Prepare the MCQs in Moodle, generate printed papers and machine-readable answer sheets, and invigilate students completing them without personal devices. Collect and scan responses, process them in Moodle and check any ambiguous or failed scans

before releasing grades. Where supported, use alternative paper versions to reduce direct answer-sharing. Suggested output: a marked Moodle quiz record, with exceptions reviewed.

02 RESTRICT, RESPOND, MARK — Moodle Quiz with Safe Exam Browser. Students bring supported laptops to the ordinary teaching room and undertake a Moodle Quiz launched through SEB. The configured assessment device is restricted to approved examination resources; marking is performed within Moodle. Test operating systems, quiz access and Wi-Fi load beforehand, provide a device-loan or equivalent alternative where needed, and invigilate to address second devices and communication. Suggested output: a Moodle quiz attempt and automatically generated result.

03 CHOOSE PROPORTIONATELY. If independent performance is the essential claim and dependable student devices or support are unavailable, supervised paper responses with automated scanning may be more practical. If institutional support can manage BYOD devices, networks and invigilation, SEB may preserve a fully digital pathway. Neither route is cost-free: one shifts effort towards printing and scanning; the other towards configuration and technical support.

04 VERIFY AND CLOSE. Use a short trial before a high-stakes sitting; confirm student identity, accessibility arrangements, contingency procedures, item and answer-key accuracy, and how results will be checked and moderated. Record what failed or required intervention. The point is a defensible assessment event, not merely successful software operation.

Where AI fits — and where it does not

Generative AI is not needed to administer either examination route. It may be useful to academics during item development, with careful checking of answers, distractors and disciplinary accuracy. During a test intended to evidence independent knowledge, access to unauthorised AI should be restricted by assessment conditions and invigilation. A paper examination does not prevent concealed-device use; SEB does not control a second phone. This note assumes the two Moodle solutions are available, but their installation, permissions, institutional policies, accessibility and local technical support must be verified in each institution. Safe Exam Browser is integrated with Moodle Quiz; Offline Quiz is a separately installed Moodle activity plugin.

Questions for adaptation

- Does the learning outcome require independent recall and application, or would an explicitly AI-permitted assessment be more appropriate?
- Which resource is locally more dependable: printing and scanning capacity, or compatible student laptops, reliable Wi-Fi and live IT support?
- How will invigilation, student accessibility, technical failures, answer-sheet recognition errors and grade moderation be managed fairly?

Three sources to explore

Caro, E., Cara, J., Juan, J., & Núñez de Prado, J. M. (2025). Secure digital assessment of data analysis courses using R. In EDULEARN25 Proceedings (pp. 1516–1522). IATED. https://www2.etsii.upm.es/ingor/estadistica/PIE/EDULEARN25_473_v3.pdf

Hernández-Mier, Y., Nuño-Maganda, M. A., Polanco-Martagón, S., Acosta-Villarreal, G., & Posada-Gómez, R. (2025). Unsupervised optical mark recognition on answer sheets for massive printed multiple-choice tests. Journal of Imaging, 11(9), Article 308. https://doi.org/10.3390/jimaging11090308

Presutti, K., Ballesio, E., Bosco, M., Ferrero, P., Ghio, T., Giraudo, C., Machetta, S., Protopapa, S., Gianluca, S., & Santantonio, M. (2025). Information technology at the University of Turin: A disruptive method for exams with the Safe Exam Browser. In A. Ullah & S. Anwar (Eds.), Proceedings of International Conference on Information Technology and Applications (Lecture Notes in Networks and Systems, Vol. 1248, pp. 121–127). Springer. https://doi.org/10.1007/978-981-96-1758-6_11

Method & provenance

This note was developed through AI-assisted critical enquiry, full-text analytical reading of three supplied papers, page-referenced extraction, comparison of methodological limitations and iterative drafting. The two Moodle pathways and their juxtaposition are the author's evidence-informed practical synthesis, not an empirically validated comparison. Hernández-Mier et al. evaluate an independent OMR system, not Moodle Offline Quiz; the two SEB papers describe institutional implementations rather than verified prevention of AI-assisted misconduct. The supplied Presutti chapter was accessible for analysis but is not presented as formally open-access. Local Moodle availability, configuration, permissions and institutional requirements are assumed for illustration and must be checked before implementation.

ABOUT THIS SERIES

Short, evidence-informed provocations that move from critical enquiry to adaptable teaching practice. Each note draws on a small, accessible reading list and makes the role of AI-assisted scholarship transparent.