

Three-Year Trial of Computer-Based National Medical Licensure Examination in Japan

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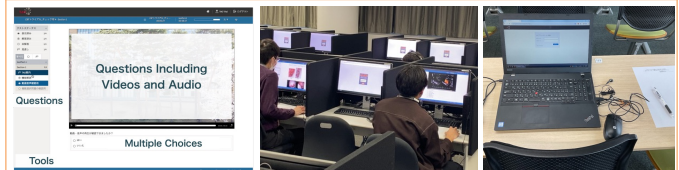
Take Home Messages

- The national medical licensing exam using CBT was smoothly conducted by utilizing TAO.
- Although the difficulty level for examinees slightly increased due to the inclusion of questions with videos and audio, it allowed for a more accurate and multifaceted assessment of the learners' abilities.
- Further consideration of the exam administration environment is necessary.

Background

- The Japan National Medical Licensure Examination (NMLE) for physicians is now administered once annually as a paper-based multiple-choice examination.
- In this study, a trial of computer-based testing (CBT) for the NMLE was conducted.
- The trial exam was conducted from 2021 to 2023 using the CBT system TAO.

Trial Examination



TAO (CBT systems)

Exam Venue

About Questions

All questions were created as **multiple-choice questions**.

Linked Question Format

When a question is answered, additional patient information is provided regardless of whether the answer is correct or incorrect, and the next question is displayed. There is no possibility of going back. This allows for the **assessment of abilities in a situation more closely resembling the clinical setting**.

Auscultation

Information that traditionally could only be presented in text format, such as "hearing wheezing," can now be demonstrated using videos or audio. This allows examinees to **actually hear and identify the sounds**.

Examinations

CT and endoscopic examinations traditionally presented key findings as still images. Using videos, a series of examinations can be reproduced. Examinees need to **identify areas of abnormality on their own**.

Neurological Findings

Examinations like consciousness level assessments, which were previously only presented as text information, can now be shown in videos. This allows examinees to **judge the results from the video and respond accordingly**.

Medical Safety

It is also possible to create questions where incorrect procedural steps are deliberately shown in videos, and **examinees are asked to identify the errors**. This can be used for question creation from the perspective of medical safety.

Comparison of Examination Formats

	Current Exam	CBT Trial Exam
Duration	2 days	1 day
Number of Question	400 questions	200 questions
Format	Paper-based	Computer-based testing
Target Participants	Medical school graduates	5th or 6th year of medical students
Exam Venue	Common venue	Each University

Summary of the Examination

	2021	2022	2023
Participating Universities	10	16	46
Number of Participating Students	321	450	1357
Score Average ± SD	105.8 ± 23.7	117.9 ± 17.0	118.6 ± 23.7
Question Items with Images	89	90	112
Question Items with videos / audio	17	20	30

Excerpts from Participants' Survey

- [Contents] It was difficult to solve the problems if I did not have sufficient practical experience during clinical training.
- [Education] When considering exams as a summative assessment of learning, the necessity of simultaneously reviewing the learning objectives and educational content in clinical training was suggested.
- [Environment] Since video and audio questions take more time to answer, the overall number of questions and time should be adjusted.
- [Environment] There were some difficulties compared to paper-based exams, such as not being able to write notes on the exam text.
- [Environment] Although it was the first time using the system, I was able to use it without problems after confirming the operations before the exam started.

Presentation



AMEE ePoster

