

Objective Structured Clinical Examination administered through Moodle

We used Moodle to create the test environment and collect all the scores from about 2400 separate tests, operating to a tight schedule with student rotation every 15 minutes throughout the morning and afternoon sessions. The patients worked in a Moodle course where all students were enrolled, evaluating online through rubrics in three-minute gaps between visits, and the subsequent written diagnosis evaluation task was administered through Moodle with timed essay questions and extra evidence.

The use of Moodle as an advanced test administration platform allowed for fast, reliable data collection and processing in a high-stakes test environment involving almost 100 students. Moodle's great flexibility means that it lends itself to sophisticated task management and workflow operations as described here, and can be fine-tuned on subsequent occasions on the basis of detailed observations of the process and suitable debriefing.

1. OSCE, then and now

The OSCE examination was first described in 1975 by Ronald Harden, Professor of Medical Education (Emeritus) at the University of Dundee: "...students rotate round a series of stations in the hospital ward... The students may be observed and scored at some stations by examiners using a check list. In the structured clinical examination the variables and complexity of the examination are more easily controlled, its aims can be more clearly defined, and more of the student's knowledge can be tested. The examination is more objective and a marking strategy can be decided in advance."

The OSCE is now a universally-accepted performance-based assessment technique that is widely used in training health professionals and in other fields. In the version used at the Faculty of Medicine, UVic-UCC, it consisted of six clinical stations where medical students visited patients (trained actors) simulating symptoms of specific ailments. Students had a few minutes to carry out an interview (anamnesis) and physical examination before seeing further data (scans, blood tests, imaging, etc.) and being tasked with its interpretation and the formulation of a possible diagnosis. Students were evaluated by their patients (trained actors) using three rubrics (**anamnesis, communication, physical examination**) and answered one written test (**diagnosis**).

2. Our OSCE solution using Moodle

Testing of about 100 students, evaluated along 4 dimensions for 6 cases: 2400 tests on a single day.

Moodle course 1. Rubrics for patients

A Moodle course containing submissionless Moodle assignment activities with rubrics.

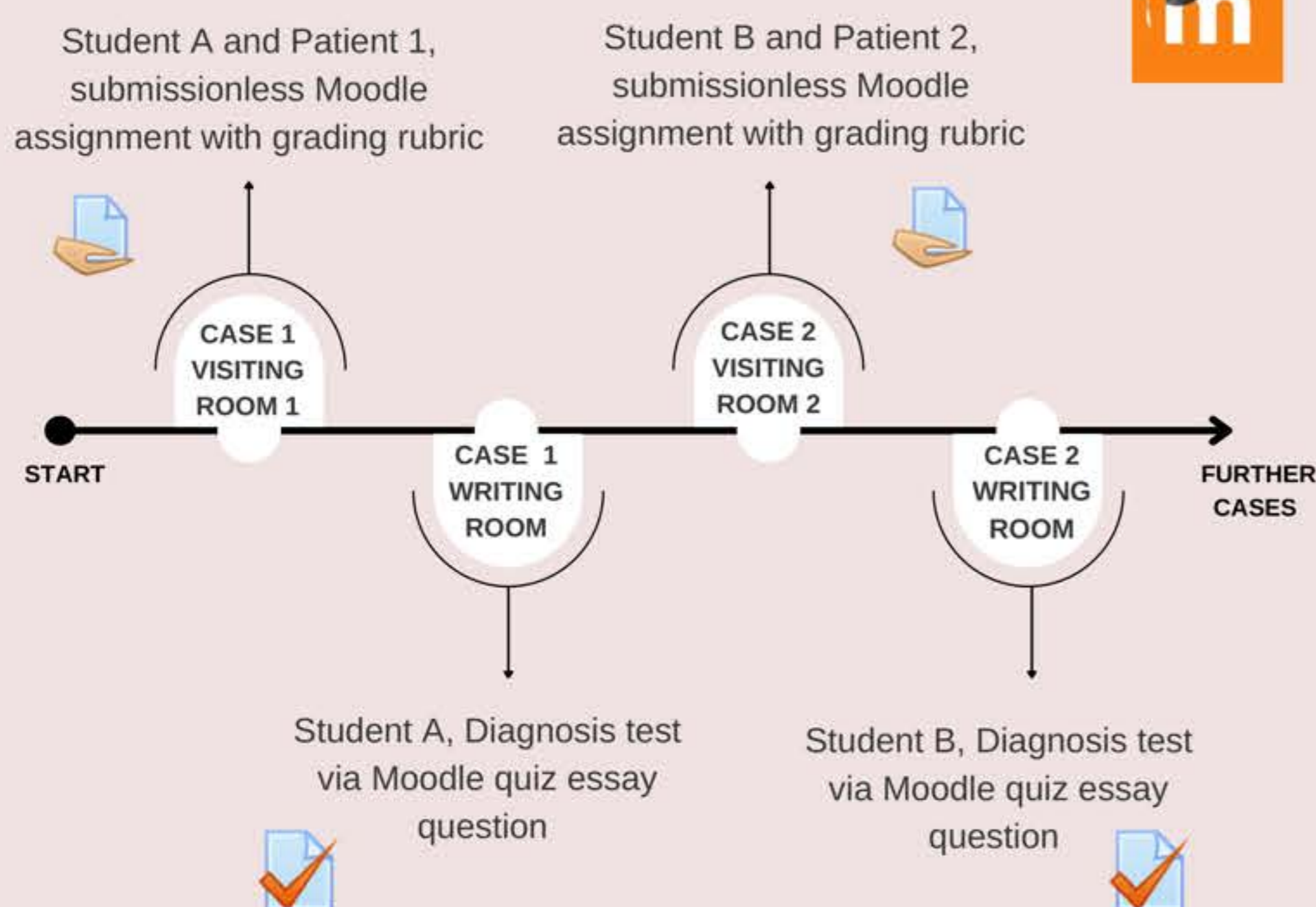
Moodle course 2. Essay questions for medical students

A Moodle course containing all six cases of timed essay questions, with a single attempt.

In the 2020 lockdown
we went 100% online
with a Moodle / Zoom
OSCE tandem!

Té alguna malaltia cardiològica? No, que jo sàpiga.	No	Sí	0 points	2 points
Pren algun medicament? No, a part de l'antibiòtic d'ara i ibuprofén i paracetamol aquests dies.	No	Sí	0 points	2 points

3. Station to station



Students follow the arrow, moving through visiting rooms and the writing room, with 12-minute slots and 3-minute turnarounds.

4. Results

- Moodle is flexible and configurable.
- Moodle is a paper-free, high privacy, secure environment.
- Moodle rubrics and quiz essay questions facilitate fast, reliable numeric grading.
- Moodle logs and live logs allowed for on-the-spot resolution of incidents.
- Formative feedback to students, if required.
- Export of all results and statistical analysis:
 - difficulty level of each case
 - relative difficulty level of cases
 - reliability of results
 - consistency of grading
 - environmental effects (time of day, order of cases, etc.)
 - comparison with traditional knowledge test results
 - progress of students from year to year
 - etc.
- Planned publications.

Help us deal with some remaining issues

- Patients cannot find the right student to assess in Moodle or choose the wrong case.
- Students open the Moodle quiz of the wrong case in the writing room.

