

<b>Work:</b>	Assessment psychometric analysis and report
<b>Reporting to:</b>	PSA Executive Board
<b>Functional responsibility to:</b>	British Pharmacological Society CEO; Medical Schools Council Assessment CEO; Co-Chairs of the PSA Executive Board
<b>Contract:</b>	Part time temporary (9 months)
<b>Location:</b>	Remote working

## **Main tasks**

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### **Purpose of the role**

The psychometrician will work with the PSA standard setting team to support the assessment build. They will also be asked to advise during post assessment review and produce a psychometric analysis report to the PSA Executive. The report will address all areas of validity, reliability and fairness of the assessment using the most appropriate modern statistical methods.

### **The detailed scope and outputs of the psychometric analysis:**

#### **1. Advice on process for data extraction from the online assessment system**

Data has historically been provided via a single Excel file for each test paper extracted from the online system containing:

- Students' actual responses on each item
- Students' scores on each item (not just by question)
- Correct answer and scoring key (for multiple choice questions)
- Medical School identifier
- Total time spent on assessment

The following data (linked to each student's responses) has also been provided to enable enhanced analysis:

- Reasonable adjustments identifier
- Student identifier (for concurrent validity assessment).

Access to the actual papers can be provided via the online system. Assistance in preparing the pass marks for the papers and allocation of papers to schools to allow test equating will be required.

The final report should suggest ways in which the format of data extracted would better facilitate future psychometric analysis.

#### **2. Interim analysis of performance data**

It is proposed that the candidate will undertake some early analysis after the first sitting for test equating.

### **3. Definitive analysis from all schools after final sitting**

Currently the use of Classical Test Theory (CTT) for the analysis is completed. A further supplementary Rasch model on the full dataset is also completed.

The suggested evaluation criteria to be applied, at item, section and by paper are:

- (1) Validity
- (2) Reliability
- (3) Fairness – evaluating student performance at item level and overall by Medical School and by Reasonable Adjustments marker
- (4) Evaluation of Angoff pass mark.

Cost/feasibility, educational impact and acceptability are not currently expected to be part of this analysis although could be considered in the future, if appropriate.

### **4. Advice on how psychometrics should be used to determine the passing standard for the assessments**

Provide advice as requested if initial examination performance review suggests that a change in the pass mark may be required. Based on the results of the evaluation of the Angoff pass mark.

#### **Outputs**

The psychometrician will support the PSA throughout build and delivery. A draft analysis report will be produced and circulated to the PSA Assessment Board at the end of August and a final draft presented to the PSA Executive Board in the September meeting (comprising leads from MSC Assessment and the British Pharmacological Society). The exact detail of the report will be based on the analysis completed. Previous psychometric reports will be shared for context but additional analysis will be discussed as part of this commission.

#### **Intellectual property rights / research outputs**

It is expected that all outputs of the psychometric analysis, including any intellectual property and / or copyright, will reside with MSC Assessment and British Pharmacological Society, and that all outputs, conclusions and recommendations will remain confidential until or unless agreed by all parties in advance.

## Person specification

The ideal candidate would have experience in the field of UK medical education and assessment psychometrics. The candidate must appreciate the need and challenges of improving prescribing competency for newly qualified junior doctors in the UK NHS.

The successful applicant will meet the following competencies:

Requirements	Essential	Desirable
<b>Experience</b> <ul style="list-style-type: none"><li>• Previous experience of completing psychometric analysis and/or reports on (medical) assessments</li><li>• Familiarity of the UK medical education curriculum and training in a wider healthcare setting</li><li>• Knowledge of prescribing</li><li>• Strong track record of research in education and assessment</li><li>• Experience of working with computer-based assessment and familiarity with the advantages and limitations of the approach</li><li>• Experience of multiple methods for standard setting for (medical) undergraduate assessments</li><li>• An understanding of analysis for reviewing assessment validity, reliability and fairness</li><li>• A leader in the field of evaluation of assessment strategies for medical education</li></ul>	<ul style="list-style-type: none"><li>• *</li><li>• *</li><li>• *</li><li>• *</li><li>• *</li><li>• *</li><li>• *</li></ul>	<ul style="list-style-type: none"><li>• *</li><li>• *</li><li>• *</li><li>• *</li></ul>