

GSL DENTAL COLLEGE'S

A COMPREHENSIVE GUIDE TO ASSESSING PERFORMANCE IN DENTAL EDUCATION



Multiple Choice Questions (MCQs)

Extended Matching Questions (EMQs)higher-order thinking, such as clinical decision making. However, developing high-quality test items, whether MCQs or clinical vignettes, can be time-consuming and requires significant staff training and quality assurance. Despite these challenges, investing in creating high-quality test items is essential to accurately assess students' knowledge and clinical competence. MCQs have high reliability and computer marking saves time and resources, but feedback is often limited due to question security. Blueprinting MCQs comprehensively to the syllabus is easy, but standard setting is time consuming. Overall, it is important to strike a balance between testing factual recall and higher-order thinking skills, and to use a variety of assessment methods to provide a comprehensive picture of a student's abilities.





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GSL Detrial college& Hospital (Promoted by G.S.L. Educational Society, Regd.No.546/1999)

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Short-Answer Questions (SAQs)

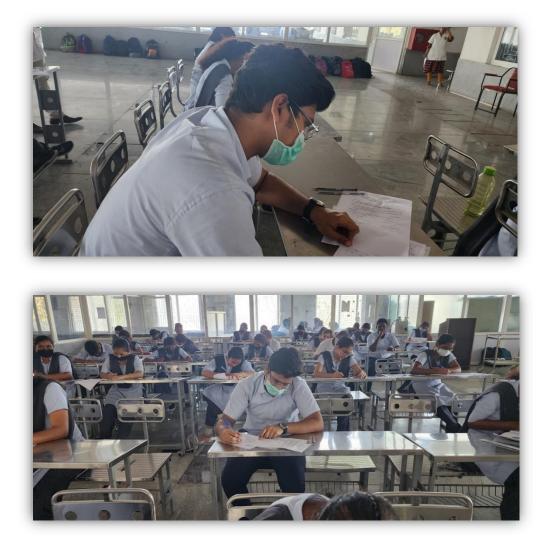
In summary, SAQs (short answer questions) are a type of written test that requires students to provide or formulate an answer rather than choose from a list of options. SAQs can have a heterogeneous answer format, ranging from one-word responses to short essays, and can be based on case scenarios or data. SAQs can be more objective than essays and easier to write and mark, but they require considerable resources for marking and are subject to marker subjectivity. To improve reliability, SAQs should have structured marking schemes and clear outline answers. SAQs may be useful for testing specific objectives or creating more challenging examinations, but they are less efficient for testing basic factual knowledge than computer-based alternatives such as MCQs and EMQs





Essays

Essays are a type of short literary composition that focuses on a particular theme or subject, usually in prose and generally analytic, speculative, or interpretative. However, there are some challenges associated with using essays as a form of assessment. They require a lot of resources to mark, are often low in reliability, and may require double marking to improve accuracy. Furthermore, the interpretation of what constitutes an essay can be confusing for students, and it can be difficult to compare essays as a method of assessment. While essays allow for the provision of written feedback, this process is time-consuming. Overall, essays are not recommended for high stakes assessment due to their limitations.



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Structured Oral/ Viva / Viva Voice

A viva is an assessment format where one or more examiners question an examinee to evaluate their knowledge, understanding, reasoning, and decision-making skills in a subject area. It can also be used to assess professionalism, attitudes, and communication skills. The format can vary, but structured viva with standardized content and structure is commonly used to reduce bias. However, interpretation of the method can vary, and reliability is low unless there are multiple examiners, cases, and large testing. A viva is time-consuming, resource-intensive, and requires careful planning of subject matter and syllabus coverage. It is considered authentic by examiners, and immediate face-to-face feedback can be built into the process. A good exam case should test the student's problem-solving skills by presenting a relatively common problem with multiple plausible diagnoses.







The 'Spotter' Test

The traditional assessment format of moving around stations to examine specimens, dissections, and radiographs, commonly used in UK dental schools, is being replaced by computerised assessments using high-quality images. The method is referred to by various local terms, but there is little published literature on the subject. The format is similar to short answer questions, and the same reliability issues exist, which can be improved through structured marking schemes. Written feedback is possible but time-consuming. To improve reliability, it is recommended to use more evidence-based forms of assessment, which may include the use of images.



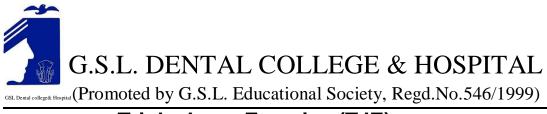


Script Concordance Test (SCT)

Script Concordance Test (SCT) evaluates clinical reasoning and decision-making skills. Experienced clinicians use "scripts" or organized knowledge to make decisions. The SCT assesses an examinee's organizational structure The of knowledge when presented with a clinical scenario. Examinees rate the effect of additional information on the diagnosis or treatment using a 5-point scale, and answers are compared to those of a panel of experts. The test is written, requires significant training for item writing, and good reliability can be achieved with sufficient questions. Suitably qualified panels of examiners are needed to produce a scoring system, and feedback is often limited to overall scores or scores in different sections due to question security.s=3/







Triple Jump Exercise (TJE)

The Triple Jump Examination (TJE) is a method of testing the critical thinking abilities of undergraduate students, originally developed at McMaster University in 1974 with an emphasis on group work and problem-based learning. There are two variations of TJE: Clinical TJE and Pre-clinical TJE.

In Clinical TJE, the student performs a written patient history and examination, followed by a write-up of findings and evidence from literature. The second "jump" involves researching the literature to support clinical practice, and the third "jump" is an oral examination covering pathophysiology, diagnosis, and treatment of the patient.

In Pre-clinical TJE, the student is presented with a written patient scenario, and must identify key issues and write a research question in PICO format. The second "jump" involves researching the literature to answer the research question, and the third "jump" is a report of their findings and a critical appraisal of the quality of the evidence.

TJE measures reasoning and learning skills, but not group work or feedback skills. The examination requires a significant amount of faculty time to conduct and score, and student performance may be case dependent. More experienced students may be used as examiners. It is usually used as a formative rather than summative assessment, and there is no evidence to confirm whether a good performance in TJE will be indicative of a similar approach in the workplace.



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Objective Structured Clinical Examination (OSCE)

The Objective Structured Clinical Examination (OSCE) is a standardized and objective way of assessing clinical skills used in medical and dental education. The exam consists of multiple mini-stations, with each station lasting from 5 to 20 minutes. The tasks can include history taking, physical examination, diagnosis, treatment planning, and more. The OSCE is highly reliable compared to individual clinical examinations, but it may compromise validity if tasks are excessively deconstructed. It requires significant resources to establish, set up and run, but it provides detailed and specific feedback. Blueprinting is needed to ensure that the selection of stations is representative of the taught course and considers several dimensions of competence within each station.





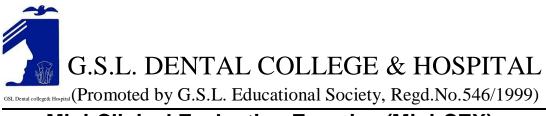


Practical Test in Simulated Clinical Setting or Laboratory

The student performs a practical task, such as a dental restoration, using a phantom head or dental manikin. The assessment is usually conducted by an expert clinician using a checklist of required standards and a global rating system. This type of assessment is similar to an OSCE, but all students usually perform the same task. Alternatively, expert opinion can be used to develop software for haptic simulators, providing feedback for the practical test. The assessment measures manual dexterity and knowledge and professionalism, which can be tested with structured questioning and observation. High frequency feedback and repetitive skills training improve early procedural skills. Reliability can be improved through clinical checklists, examiner training, and the use of multiple examiners. Comparing scores between examiners can check correlation and reliability for a specific assessment. However, these methods require more resources.







Mini-Clinical Evaluation Exercise (Mini-CEX)

The mini-CEX is a method of assessing clinical competency by observing a trainee in a short, 15 to 20 minute real patient encounter, followed by immediate feedback from an examiner. Multiple mini-CEXs are used to provide a more reliable assessment of the trainee's skills, which include history taking, physical examination, diagnostic abilities, clinical judgement, decision making, communication, and time management. The mini-CEX is primarily used for formative feedback, with the goal of developing an action plan to support the trainee's learning. However, having an assessor who is also a trainer may compromise their role, and students may be hesitant to request assessments if they are part of a progression gateway that could highlight training needs. Overall, the mini-CEX provides a high level of authenticity and reliability when used appropriately.





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Directly Observed Procedural Skills (DOPS)

DOPS (Directly Observed Procedural Skills) are a workplace-based assessment method designed to evaluate practical skills. An assessor observes and scores a student's performance of a routine practical procedure using a standardized form, with the student being deemed competent or incompetent. Multiple assessments of the same skill are required, typically six, for the student to pass and be considered competent. DOPS offer high authenticity and are criterion-referenced, focusing on psychomotor skills. They also present a valuable opportunity for formative feedback with a written marking sheet. However, they are resource-intensive and require suitable cases for assessment. DOPS have also been used for peer assessment, with dental students able to detect improvement in their peers' performance over time.



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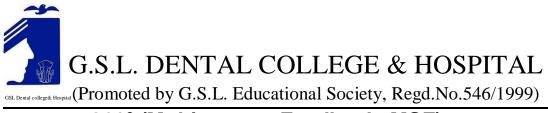


Dental Evaluation of Performance Test (ADEPT)

The UK dental postgraduate foundation training program uses a combination of DOPS (Direct Observation of Procedural Skills) and mini-CEX (mini-Clinical Evaluation Exercise) to assess newly qualified (foundation) dentists' performance once a month for the first year in supported practice. Evaluators observe the dentist's performance during patient encounters and rate them on a 6-point scale based on criteria such as treatment planning, communication, and time management. The standard expected upon completion of Dental Foundation Training (DFT) is used as a reference point. The assessment covers all major competencies of the clinical domain and includes feedback on the foundation dentist's insight into their own performance.



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360° (Multi-source Feedback, MSF)

Collecting feedback on a clinician's workplace performance is an assessment process that involves structured questionnaires or forms completed by a range of colleagues and patients. This process assesses skills such as communication, team working, professionalism, and insight. The feedback is then collated anonymously and used for appraisals and professional development. The assessors include staff members who are more senior, more junior, peers, and representatives of all groups in the clinician's working environment, including administrative staff and patients. While this process is resource-intensive, it provides valuable information about professional behavior and insight.





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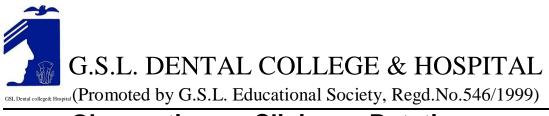


Case-based Discussion (CbD)

In a formal case-based discussion, a trainee discusses a case they have managed with an assessor who probes their understanding, decision-making, and clinical judgement. The discussion is based on case records, and a structured assessment form is used to rate key skill areas. This format is commonly used for formative assessment and is similar to Chart Stimulated Recall in medicine. The trainee can talk about any issues that arose and explain their decisions. Choosing a challenging case can maximize the benefits of the discussion. This format has high authenticity and a standardized rating system but may have low reliability.







Observation on Clinics or Rotations

Clinical work assessments, also known as Longitudinal Evaluation of Performance (LEP), are based on observing and evaluating students' performance over a period of time in a clinical setting. These assessments can cover a range of skills and behaviours, from basic factual knowledge to technical skills and professionalism.

However, the method of marking and assigning grades can vary greatly, and may involve a single tutor or multiple members of the team. This type of assessment can be subjective and prone to biases such as halo effects, leading to low reliability.

Despite these limitations, clinical work assessments can provide valuable feedback to students, especially if conducted by multiple sources. Overall, this type of assessment offers a useful opportunity for students to receive feedback on their clinical skills and professional behaviour.







Portfolios

A portfolio is a collection of materials that demonstrates a student's learning and achievements, which can be in paper-based or electronic format. It is not an examination format, but rather a mixture of materials that are assessable according to predefined marking criteria. The content can be quite diverse and may include written assignments, reports, feedback, case studies, projects, photographs, videos, and curriculum vitae. Portfolios can also be used to plan learning needs, monitor progress, and reflect on learning.

However, there is heterogeneity in the meaning of portfolios as it covers many different formats. It can also be resource-intensive to develop and maintain a portfolio. Additionally, assessing reflection within a portfolio can be difficult and controversial. Assessment of portfolios is often an ongoing process that can be formative and/or summative, and interviews may be conducted to determine how well the portfolio reflects the student's achievements. Portfolios are not always formally assessed, with the requirement being the provision of evidence that certain tasks have been completed with a grade for engagement with the process.





FEEDBACK

Feedback is crucial for the development of professionals, but there is often a lack of effective feedback in professional educational programs. Traditionally, feedback has been a teacher-led process, but modern approaches encourage a dialogue between trainer and trainee. Effective feedback should help develop the student's self-evaluation skills and be timely, accurate, non-judgemental, and balanced. Staff training and student training in seeking and using feedback can improve the feedback culture. Feedback takes time, and staff members need to be encouraged to prioritize feedback discussions. The feedback dialogue should encourage the student to identify and reflect on their strengths and weaknesses, supported by a skilled tutor, and generate a plan for improvement.





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