JOHNS HOPKINS UNIVERSITY

University Council on Learning Assessment Office of the Provost

Best Practices in Assessment for Different Modalities, Methods, and Types

Assessment Options and Alternatives

Below are suggested assessments to use for diagnostic, formative, and summative assessments. The assessment types and methods may depend on what the instructor is trying to measure or evaluate:

1. Skills
2. Knowledge
3. Analysis and evaluation of content
4. Creativity in synthesizing and critiquing concepts
5. Competencies
6. Lab work
7. Experiential learning
8. Simulations

Credit Bearing Online and Onsite Courses			
Assessment Types	**Onsite Assessments Methods**	**Online Assessment Methods**	**Suggested Technology**
Diagnostic Assessments	1. Written questions: multiple choice or short answer 2. Pre- and post-tests, which allows the instructor to measure growth 3. Self-assessments or reflections based on specific competencies to assess prior knowledge 4. Open class discussion responses based on specific content and prompts 5. Interviews with each student separately, this may work with small enrollment courses	1. Written questions: multiple choice or short answer 2. Pre- and post-tests, which allows the instructor to measure growth 3. Self-assessments or reflections based on specific competencies 4. Asynchronous discussion board responses based on specific content and prompts 5. Interviews with each student separately, this may work with small enrollment courses	1. LMS quiz tool LMS quiz tool, survey tool in MS forms or Qualtrics 2. Portfolio tool such as Digication 3. LMS discussion tool Zoom or MS Teams 4. Panopto, Zoom, VoiceThread, or Microsoft Stream

	6. Observations of student performance based on competencies: In class presentation	6. Observations of student performance based on competencies: Uploaded videos or presentations through the LMS	
Formative Assessments	1. Short quizzes or knowledge checks to test understanding 2. Presentations 3. In-class activities 4. In-class discussions	1. Test understanding - Create short frequent: a. Quizzes b. Polls 2. Create formative assessments to drive learning, such as: a. Performances b. Presentations c. Interactive content activities 3. Self-assessments through: a. Reflection papers b. Portfolio reflections 4. Student led discussion sessions: a. Synchronous b. Asynchronous	1. Test understanding: a. Quiz tool in LMS for knowledge checks b. iClickers, MS Forms in Present Mode, or Zoom polls 2. Students create a. Performance recordings uploaded to Panopto, Kaltura, or VoiceThread b. Multimedia presentations in PowerPoint, VoiceThread, etc. c. Interactive content activities: concept-mapping tools, textbook publisher interactives, graphic organizers, visualization tools 3. Upload or post reflections within the LMS (how to journal in Canvas), or create a Class Notebook through MS Teams. 4. Lead conversations in: a. Synchronous sessions through Zoom or MS Teams. b. Asynchronous sessions through the LMS discussion tool, VoiceThread, or MS Teams.

Summative Assessments	1. Exams / Tests 2. Papers 3. Projects 4. Case studies 5. Performance 6. Portfolio	1. Exams built online: a. Open book –timed b. Randomized questions c. Randomized questions from a large pool d. Use multiple versions of an exam e. Randomized choices of answers f. Proctored exams 2. Short Paper or Final Paper 3. Project, Digital Posters, Presentations 4. Case Studies 5. Performance 6. Digital or ePortfolio	1. Exams built into the: a. Quiz tool in the LMS b. Proctoring tool may be enabled 2. Assignment tool in the LMS, Turnitin may be enabled. 3. Panopto, PowerPoint, VoiceThread, interactive authoring tools, infographic creation tools, screencasting tools, 4. Case Studies – tools that can assist faculty in generating a case study include: Zotero, Paperity. Tools can also be used by students to create their projects. 5. Performance – upload videos to Panopto, VoiceThread, or MS Stream. 6. Portfolio tools such as Digitation
	Large Class Exams	1. Use Peer Grading/ 2. Peer Assessments 3. Use Creative TA Grading	1. Canvas/ Course Plus Grading systems. 2. Gradescope 3. Other tools as available

Lab and Design Course Assessments			
	Onsite Assessments	**Online Assessment Suggestions**	**Technology**
Formative / Summative Assessments	Lab work	1. Use virtual labs to replicate the assessment task and assess student performance 2. Use simulations and ask the students to evaluate or analyze them 3. Help students create a. Presentations b. Performances	1. Use assessments built into the virtual lab tools or based on the virtual labs. 2. Use assessments built into the simulation tools or based on the simulation labs. 3. Presentations or performances can be uploaded to Panopto, VoiceThread, or MS Stream.
Formative / Summative Assessments	Problem solving tasks	1. Assign projects that encourage creative approaches to problem solving. 2. Provide students with raw data and ask them to analyze it.	1. Panopto, PowerPoint, VoiceThread, concept-mapping tools, interactive authoring tools, infographic creation tools, screencasting tools, etc. 2. SPSS, STATA, R, NVivo, Excel, etc.
Formative Assessments	Teamwork in problem- based learning	1. Create spaces using technology to connect and create group projects	1. Utilize group assignments and discussions in the LMS, MS Teams, or collaborative tools

Experiential Learning Course Assessments			
	Onsite Assessments	**Online Assessment Suggestions**	**Technology**
Formative assessments FOR learning	Problem solving activity	1. Replicate activity within the LMS or other environments	1. LMS group discussions, Zoom breakout rooms, MS Teams (private channels can help facilitate small-group discussion)
	Reflective journals	1. Create a reflection space in the LMS or another space	1. Reflection could be created in the a. Assignment or discussion tools in the LMS, (how to journal in Canvas) b. Portfolio tool such as Digication
	Presentations/ Reports	1. Presentations or reports can be created using available technology and uploaded to a platform of their choice.	1. Presentations or reports can be created using Office365 tools, screencasting tools, or Panopto Capture and can be uploaded to Panopto, MS Stream, or VoiceThread.
Formative assessments FOR learning AS Learning (self and peer evaluation)	Creative Activities	1. To gauge progress and learning, instructors can create activities and performances to assess learning and improve instruction a. Performances b. Small assessments c. Presentations d. Activities and Discussions	1. Exam and knowledge check tool in the LMS a. Quiz tools in the LMS b. Assignment or discussion tools in the LMS c. Presentations uploaded to Panopto, VoiceThread, or MS Stream d. Discussion tools in the LMS
	Teamwork	1. Create team spaces online to facilitate team activities 2. Create team projects a. Collaborating on papers b. Creating presentations and performances	1. Collaborative spaces can be created using LMS group discussions, Zoom breakout rooms, and MS Teams (private channels can help facilitate small-group discussion) 2. Office365 provides a suite of collaborative tools and has a collaborate feature built into the Canvas LMS, Zoom whiteboard provides a collaborative brainstorming space, and MS Teams provides a collaborative ecosystem.
	Peer group evaluations	1. Students can evaluate each other's work in the LMS. Feedback could be private through the team space or public on the discussion board	1. Use discussion tools in the LMS, the peer review feature within the LMS, or integrated peer review tools.

Supplemental Assessment Modalities for Undergraduate Medical and Graduate Biomedical Education

This section highlights additional assessment modalities tailored to the specific needs and contexts of undergraduate medical education and graduate biomedical education.

Modality	Description	Example
Structured Clinical Observation (SCO)	Faculty directly observe students during clinical tasks and provide structured feedback.	Bedside feedback on physical exam skills.
Clinical Logbooks	Students document clinical encounters and reflect on learning.	Tracking diverse patient interactions during rotations.
Case-Based Discussions (CBD)	Assessment based on a structured review of a real patient case the student was involved with.	Discussion of management decisions and clinical reasoning.

Modality	Description	Example
Grant Proposal Peer Review	Students evaluate peer proposals using scientific review criteria.	NIH-style mock review panels for practice.
Research in Progress (RIP) Seminars	Ongoing project presentations assessed for clarity, progress, and rigor.	Monthly RIP meetings in lab groups.
Thesis Committee Feedback	Formal written evaluations from thesis committee meetings.	Committee feedback on project scope and milestones.

Appendix: Supporting Resources and Best Practices

Evidence-Based References

1. Norcini, J., & Burch, V. (2007). Workplace-based assessment as an educational tool: AMEE Guide No. 31. Medical Teacher, 29(9), 855–871.
2. Holmboe, E. S., Sherbino, J., Long, D. M., Swing, S. R., & Frank, J. R. (2010). The role of assessment in competency-based medical education. Medical Teacher, 32(8), 676–682.
3. Brown, G., Bull, J., & Pendlebury, M. (2013). Assessing Student Learning in Higher Education. Routledge.
4. American Association of Colleges of Nursing (AACN). (2021). Essentials: Core Competencies for Professional Nursing Education.
5. National Institutes of Health. (2020). Mentored Research Scientist Development Award (K01) Application Guide.

Sample Rubric: Critical Thinking in Biomedical Research

Criteria	Proficient	Needs Improvement
Clarity of Research Question	Clearly defined and aligned with study aims.	Vague or misaligned with project objectives.
Integration of Literature	Integrates and critiques relevant literature.	Limited or superficial references.
Feasibility and Rigor	Methodology is feasible and scientifically sound.	Unrealistic or lacks methodological detail.

Encouraging Faculty Reflection

Faculty are encouraged to use brief reflection forms following each assessment cycle. These forms can include questions such as:

- What aspects of the assessment went well?
- What unexpected outcomes or challenges were observed?
- How might this assessment be adapted for future use?

Collecting faculty insights can support continuous improvement and align assessment practices with evolving instructional goals.

Assessment Modality	Undergraduate Medical Education Examples	Graduate Biomedical Education Examples
Objective Structured Clinical Examinations (OSCEs)	Simulated patient encounters to assess clinical reasoning and communication.	Adapted OSCEs in translational medicine training to evaluate patient communication.
Clinical Logbooks and Case Reflections	Students document and reflect on clinical cases to track competencies.	Students maintain reflective journals during lab rotations to assess growth.
Team-Based Learning (TBL)	Small-group sessions to apply concepts in clinical scenarios.	Collaborative journal clubs to critique literature and develop critical thinking.
Competency-Based Progress Assessments	Longitudinal assessments across clerkships mapped to AAMC competencies.	Milestone evaluations tied to research skill development or thesis progress.
Simulation-Based Education	High-fidelity mannequins to assess procedural skills and emergency response.	Research simulation labs to assess pipetting accuracy, experiment design, etc.