JAN 2024
ISSUE 01

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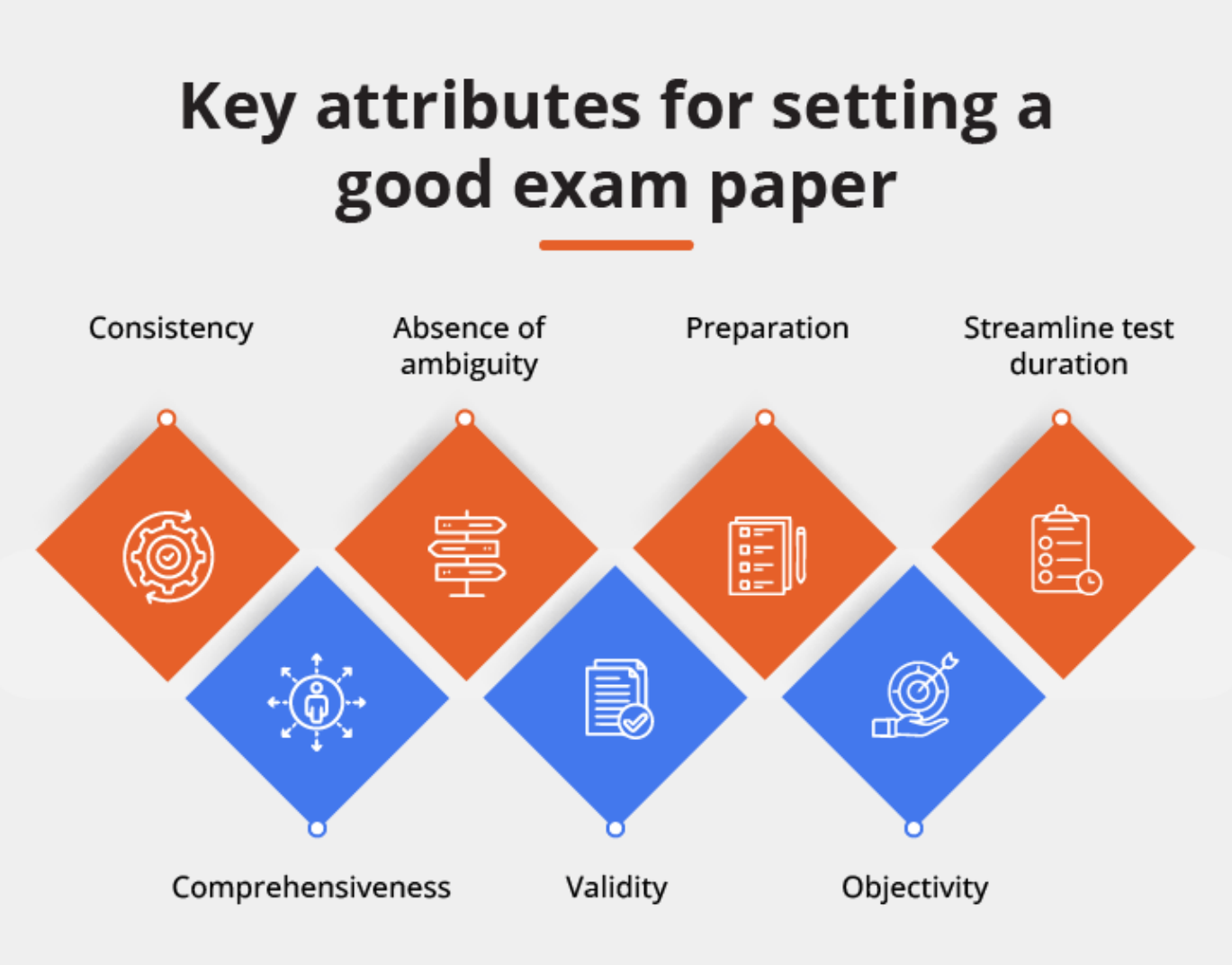
News bulletin of AMBI
West Bengal Chapter

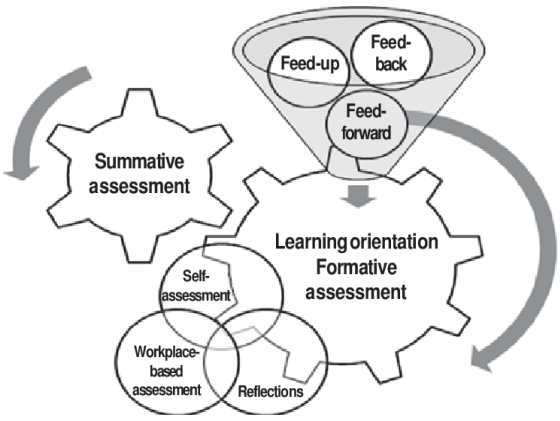
The Biochemistry Chronicles



Question paper setting

``*Phalena pariciyata* ''- We emphasise judging by the results in Vedic literature. So, if a student is judged by his results, a teacher is marked by his questions.

Under the NMC guidelines, we are following a competency-based medical education module in which assessment is crucial in implementing the curriculum[1]. Therefore, assessment incorporates integration to the extent feasible while maintaining subject identity. The utility of the evaluation is traditionally expressed as a notional concept, represented as a product of validity, reliability, acceptability, feasibility, and educational impact.[2] For CBA, validity and educational impact are the major determinants of its utility[1].



The paradigm of Medical Student assessment:

In the current CBME module, we have three types of assessments as

1. Summative assessment (University examination):
2. An evaluation is conducted at the end of instructions.
3. Formative assessment: An assessment conducted during the instruction to
4. Provide feedback for improving learning.
5. Internal assessment- what is learnt and how it is understood. It can have both formative and summative functions.

QUESTION PAPER PREPARATION[4-6]:

A question paper is the primary tool for written summative or formative examinations. We can divide its preparation into four significant steps

1. Design of question paper
2. Preparation of a blueprint of the question paper
3. Preparation of a marking scheme
4. Refining the question paper

Design a question paper:

- Bloom's taxonomy of learning defines three domains of learning: cognitive (knowledge), Psychomotor (practical skills), and affective (attitudes)[7]. However, the written format of assessment mainly assesses the mental domain. This domain can be divided into three main subdivisions: knowledge, comprehension, and application.
- Questions from higher levels of Bloom's taxonomy can be used to improve the quality.
- The syllabus topics can be classified into three broad categories: 1) must-know, 2) desirable to know, and 3) nice to

know (NK) for students. It can serve as a guide for deciding the weightage to be considered while setting the paper.

- Every subject has a vision or target the student should develop or achieve when completing it. For example, Biochemistry should help students integrate molecular events with the structure and function of the human body in health and disease.

  While setting the question paper, this view should be reflected in assessing the student`s knowledge. A good question design should have clarity, reliability, validity, authenticity and fairness.
  Every assessment must be valid, which implies that candidates who achieve the student's minimum performance level have acquired the competence set out in the learning objectives[8].
- The total number of questions, marks allotted in fractions and the length of the paper with the designated time allotted should be justified. The number of sections in the paper also requires to be decided.
- According to NMC guidelines -use a combination of various types of questions as structured essays (Long Answer Questions - LAQ), Short Answers Questions (SAQ) and objective type questions (Multiple Choice Questions - MCQ should not have more than 20% weightage)[1] makes a better recipe. Marks for each part should be indicated separately.
- LAQ should be structured, and the objectives should be clear and precise. The most important one is that construction should test the different domains.
  Problem-based LAQS allows the student to explore the subject material more in-depth and structure an argument.
- SAQs are best used for the cognitive domain's lower to middle part, testing knowledge, comprehension, application, and analysis. This type of assessment can cover a large topic area.
- MCQs were mainly simple completion and negative statements[9]
- The suggested distribution of the cognitive level of questions is recall type 50%, comprehension 25% and application 25% for preclinical subjects like Biochemistry[9]
- Use appropriate verbs for the questions at each level to assess higher levels of learning[10].
- Verbs in various levels in the Knowledge domain (Bloom's taxonomy)[10]

Level	Suggested Verbs
Knowledge	Define, Describe, Draw, Find, Enumerate, Cite, Name, Identify, List, label, Match, Sequence, Write, State

Comprehension	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalise, Identify, Illustrate, Interpret, Review, Summarise
Application	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis	Analyse, Characterise, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorise
Synthesis	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organise, Plan, Produce, Propose
Evaluation	Appraise, Assess, Conclude, Critic, Decide, Evaluate, judge, Justify, Predict, Prioritise, Prove, Rank

- The question paper aims to know whether most of the students have achieved the minimal skills/knowledge required. Excellency can be assessed either by individual oral viva or a small percentage of the total marks of the question paper, which can be allotted for that.
- Many universities plan the weightage of various topics in the question paper according to the distribution of hours for the same subject in the CBME curriculum.

Blueprint of the question paper:

A blueprint is a guiding road map for an assessment program that covers all aspects of the curriculum and domains. The blueprint links assessment to learning objectives according to the guidelines.[11-13] The blueprinting grid/table helps the paper setters balance the
question papers in content-related aspects.

Blue printing in knowledge domain[1]

Level	Topic A	Topic B	Topic C	Topic D	Total
Knowledge	1	2	1	1	5 (20%)
Comprehension	1	1	1	2	5 (20%)
Application	2	1	1	1	5 (20%)
Analysis	1	1	2	2	6 (24%)
Synthesis		1		1	2 (8%)
evaluation	1		1		2 (8%)
Total	6 (2%)	6 (24%)	6 (24%)	7 (28%)	25 (100%)

Preparation of a marking scheme:

Once the blueprint and according to that model paper is ready, the marking system should also be prepared for fair and uniform evaluation. There are two types of marking schemes – Analytical (Objective type and short answer type) and Global (Long answer type)[14].

Refining the question paper:

Once it is prepared, the question paper needs to be reviewed and refined to validate it. The checklist may follow the following points:

1. The paper covered the syllabus.
2. The paper can assess the objectives in the syllabus
3. The model paper adhered to the scheme shown in the blueprint
4. Set at an appropriate level of difficulty
5. Can identify the performance discrimination of the individual student
8. Check if there is any overlap between questions
9. The time frame to answer for the student is sufficient
10. Comparable in standard with previous papers.
11. The aspect of repetition of the previous year`s questions should be kept in view.

- The final step is to ensure confidentiality.

Conclusion:

As the question paper is the tool to assess the written examination, an adequately designed paper plan can make the assessment fair and justified.

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