

**University of Benghazi**  
**Faculty of medicine**  
**Bachelor of Medicine and Surgery (M.B.Ch.B) program**

**Learning and Assessment Strategies**

**For The program of Bachelor of Medicine and Surgery**

**University of Benghazi**

**2022-2023**

**Introduction:**

The program of Bachelor of Medicine and Surgery in the University of Benghazi was established in 1970. With globalization and the need of our graduates to continue their training and work overseas, we are putting the effort to evolve our education system by utilizing ideas, techniques and information pouring from the upstream of first world countries. It is our aim to help our students make education a life learning process, and develop the skills for application of knowledge and problem solving. For these purposes the program has adopted multiple learning and assessment strategies. These strategies are summarized this document.

**1- Learning strategies**

**Definitions:**

- **Learning (التعلم):** is relatively permanent changes in behavior (skills, knowledge or attitudes) resulting from identifiable psychological or social experiences.
- **Education (التعليم):** A purposeful process of facilitating learning.
- **Teaching/ instruction (التدريس):** the actions of a real live instructor designed to communicate learning to the student.
- **Teaching strategies:** refer to methods used to help students learn the desired course contents and be able to develop achievable goals in the future.

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**Aims of teaching strategies:**

Any learning strategy aims to achieve one or more of the following:

- Help students acquire knowledge.
- Help students acquire skills.
- Shape the character, attitude and behavior of the students.
- Motivate students.

**Steps for preparation the strategies :**

- The curriculum committee in collaboration with academic departments developed the learning and assessment strategies for the MBCHB program by adopting the following approach: .
  - Multiple lectures and workshops were conducted by the medical education department in order to raise the faculty awareness, knowledge and understanding of the different learning and assessment strategies.
  - Students and academic staff opinions regarding the courses (including the used learning and assessment methods) were assessed.
  - Advices and recommendations from external examiners and consultants were reviewed.
  - Course and program reports were reviewed.
  - Requirements of National Center for Quality Assurance and Accreditation of Educational Institutions (NCQAAEI) as well as requirements of National Authority for Quality Assurance and Accreditation of Educational (NAQAA)E and NARS were considered.
  - The curriculum committee in collaboration with academic departments prepared the first draft of proposed learning and assessment strategies.
  - The proposed strategies were then discussed by the faculty council and finally approved.

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**Procedures of reviewing and updating the strategies:**

- According to the curriculum committee bylaws the committee periodically review the program`s and the courses` aims, competencies, contents, contact hours, learning strategies and assessment strategies in the light of the:
  - Standards of the World Federation of Medical Education (WFME).
  - National Academic Reference Standards (NARS) that are adopted by the faculty council.
  - Standards of the National Centre of Quality Control and Accreditation of Educational and Training Institutes (NCQCAETI).
  - Yearly program and courses reports.
- The curriculum committee prepare the initial draft of suggested updates and sends it to the different educational departments for revision and amendment.
- The second draft prepared by the educational departments will be reviewed again by the curriculum committee and discussed with internal and external reviewers to prepare the final draft.
- The final draft is sent to the faculty council for final review and approval.

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**Types of used teaching strategies:**

The MBCHB program at the faculty of medicine is utilizing a variety of learning methods and techniques to ensure that all the curricular intended outcomes have been adequately delivered.

- **Direct instruction strategies:**
  - Lectures
  - Tutorials
  - Seminars
- **Indirect instruction strategies:**
  - Case studies
  - Brain storming
  - Problem-Based Learning (PBL)
- **Interactive instruction strategies:**
  - Team-Based Learning (TBL).
  - Flipped classroom
  - Problem solving
  - Open discussion
  - Brain storming
- **Experiential learning strategies:**
  - Bedside teaching
  - Field visits
- **Individual study strategies:**
  - Distance education

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**Lecture (large groups)**

Lectures are designed to cover the knowledge and understanding levels of the cognitive domain. They are delivered for large groups in lecture halls to set the scene for a topic, highlight important issues and arouse curiosity in relevant areas.

**Tutorials (small groups)**

Tutorials are designed to cover the knowledge and understanding levels as well as of the cognitive domain. It is a teaching method that is less formal than a lecture, tutorials are conducted in small classes in which material from lectures and readings can be discussed in more detail.

**Seminars (small groups)**

They are a combination of a Lecture and Tutorial. Seminars include students doing presentations on set topics; lecturers give mini lectures; study questions being set so that students can discuss them in a large group. They are much less formal than lectures and designed to give students time to discuss texts and deepen their understanding of the topics at hand and the course itself. The method enhances students' participation in the learning process and help the development of students' self-learning abilities.

**Case studies/Case-Based Learning (small groups)**

Case study is an active learning method that is designed to cover the application, analysis and evaluation levels of the cognitive domain (intellectual skills). It connects theory to practice, through the application of knowledge to the cases, using inquiry-based learning methods. Case studies are used as a way to get students to apply their intellectual skills, to a real-world situation. They use written scenarios based on situations in which students observe, analyze, apply, conclude and summarize, or recommend. The method enhances students' participation in the learning process and help the development of students' self-learning abilities.

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**Team-Based Learning (small groups)**

Team-based learning (TBL) is an evidence based collaborative learning teaching strategy designed around units of instruction. TBL is designed to facilitate learning of knowledge, understanding and intellectual skills of the cognitive domain as well as the leadership, the dynamics of team work, communication skills and time management. The method enhances students' participation in the learning process and help the development of students' self-learning abilities.

**Problem-Based Learning (small groups)**

Problem-Based Learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem about a real-world issue. Students have to examine and define the problem and explore what they already know about underlying issues related to it, and then they have to determine what they need to learn and from where they can acquire the information necessary to solve the problem and finally present a solid solution. PBL is designed to facilitate learning of knowledge, understanding and intellectual skills of the cognitive domain as well as the leadership, the dynamics of team work, oral and written communication skills and time management. The strategy also teaches concepts and encourages lifelong learning at the same time.

**Flipped classroom (small groups)**

Flipped classroom is a “pedagogical” approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter”. The ‘flipped classroom’ uses a type of learning approach reversing the traditional learning environment by delivering instructional content outside of the classroom. While during the face-to-face session, material that may have traditionally been considered homework assignments is discussed. Students should finish the lower level of cognitive work before class, and when they come to class, they engage in higher cognitive levels of learning with peers and in the presence of a

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teacher. Flipped classroom is designed to facilitate learning of knowledge, understanding and intellectual skills of the cognitive domain as well as the leadership, the dynamics of team work, communication skills, presentation skills and time management. The method enhances students' participation in the learning process and help the development of students' self-learning abilities.

**Brain storming**

This strategy is designed to cover the application, analysis and evaluation levels of the cognitive domain (intellectual skills). The basic assumption of this method of teaching is that a group of pupils can give more ideas than a single person. This is an interactive and indirect learning strategy during which the students are asked to put forward their views on a given problem one by one. Thus many views regarding the nature of the problem, its causes and its possible solutions come to light. Finally, conclusion is drawn after evaluating these jumbled ideas.

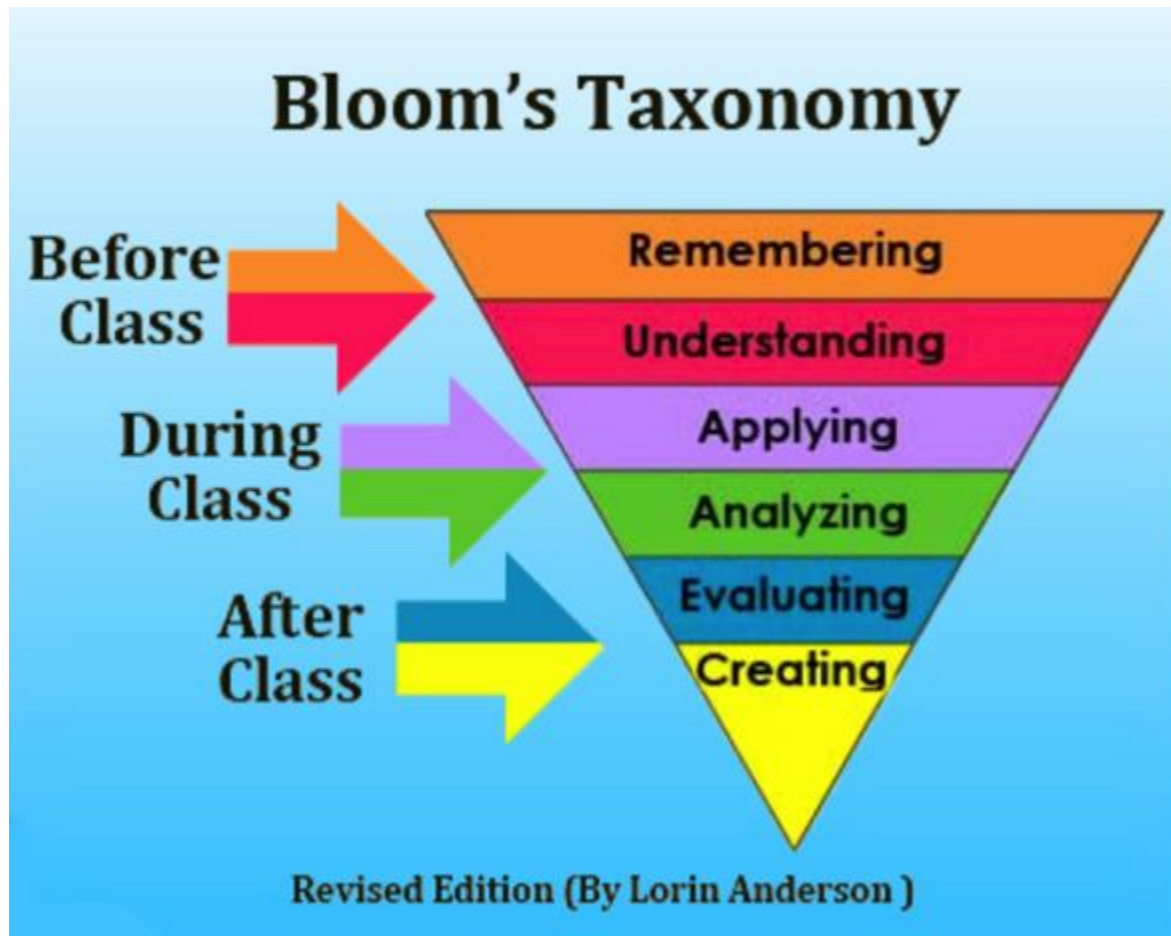
**Problem solving**

This is an interactive learning strategy during which the students arrive at decisions based on prior knowledge and reasoning. It is designed to cover the application, analysis and evaluation levels of the cognitive domain (intellectual skills). This strategy involves three steps, during which the students will 1- Define the problem, 2. Analyze the problem by breaking it down into its components and discovering the relations and connections between them, 3- Generate alternative solutions and finally, 4. Evaluate and select an alternative.

**Self-directed learning**

A self-directed learning strategy is used to guide students to independent learning and take personal responsibility and ownership of their learning. Students are encouraged to formulate their own learning objectives, to identify resources and devise strategies for using the resources to achieve their objectives, also students are supported in carrying out their learning

plans and they are involved in evaluating their own learning – this can develop their skills of critical reflection. The goals of Self-directed learning are achieved by applying multiple learning techniques including but not limited to; research projects, assignments, blended learning, flipped classroom, team-based learning.



**Open discussion/group discussion (small groups)**

Small self-study groups to discuss case scenarios, data interpretations, answering multiple choice questions and searching the literature for relevant answers and discussions.



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**Practical teaching (small groups)**

This teaching method takes place during the preclinical phase. It is designed to teach the students` the professional and practical skills in the laboratories and morgue in order to teach practical aspects of human anatomy, physiology, biochemistry, histology and histopathology, microbiology, parasitology and pharmacology

**Bedside teaching (small groups)**

This teaching method is designed to teach the students` the professional and practical skills including;

- History taking skills.
- Physical examination skills and the ability to identify physical signs
- Communication & professionalism skills (including ethics and maintaining patient welfare)
- Clinical-reasoning and decision-making skills:
  - Interpreting clinical data and generating differential diagnosis.
  - Selecting proper investigations.
  - Formulating management plan and prescribing the suitable treatment.

The used teaching techniques include; direct observation, demonstration and reporting back. Other teaching methods such as mentorship, patient-centered model and case conference are utilized during the internship year.

**Field visits (large groups)**

They are learning events that take place outside the regular classroom, in which students travel to another location in the facility or outside the facility. The purpose of these trips is observation for education. This method of experiential instruction helps the students to make connection between reality and theory. It takes place during the family and community medicine course where students take visits to different fields including one of the factories to demonstrate occupational hazards, one of the hospitals to show

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the problem of hospital waste, one of the kindergartens to discuss with the students the healthy school environment.

### **E-learning**

E-learning is a learning system based on formalized teaching but with the help of electronic resources such as computers, tablets and even cellular phones that are connected to the internet. The idea behind electronic learning is to empower learners to study without attending the school with better organization and quality curricula. The outbreak of COVID-19 has fuelled medical faculty need to leverage the technology platforms to drive learning initiatives. Social media is a public networking space where end users establish online communities for effective discussion. These online communities are helpful to circulate information, thoughts, and various other contents. There are many social media platforms like Twitter, Facebook, YouTube, and online blogs. The obligation for an advancing education is more important than ever before, thereby incorporation of social media in the modern educational system is a must. During the COVID-19 pandemic in 2020 and as a result of the universal blockade the faculty converted to asynchronized e-learning using the telegram and zoom application as an educational platform.

### **Blended learning**

Blended learning is an approach that combines online educational materials and opportunities for interaction online with face-to-face classroom methods. Blended instruction is in fact more effective than purely face-to-face or purely online classes. The MBCHB program is adopting a rotation model of blended learning where students rotate through a schedule of independent asynchronous online study and face-to-face classroom time.

## **2- Students' assessment strategies**

### **Aim of assessment:**

Students should demonstrate their ability and show whether they have fulfilled the course objectives/ILOs. Inaccuracies in the competency of our students (or on judgments on competency) could place patients at risk.

### **Types of used assessments:**

- A multiple formative and summative assessments are performed systematically throughout the program duration in order to determine the extent to which the predetermined intended learning outcomes are achieved by the students. These include different combinations of written, practical and oral examinations.
- The MBCh program at the faculty of medicine is using:
  - Both formative and summative assessments.
  - An assessment system that utilizes a variety of methods and techniques to ensure that all the curricular outcomes have been adequately met.
- **Formative assessment:**
  - They are diagnostic, ongoing, frequent, low-stake assessments that primarily aim to improve learning (assessment for learning). The most used techniques for formative assessment are:
    - Pre-class question: asking questions at the start of the class about the previous day's work.
    - Observations during in-class activities; of students verbal and non-verbal feedback.
    - End-of-class feedback and questions.
    - Homework exercises as review for exams and class discussions
- **Summative assessment (evaluation):**
  - They are judgmental, final, infrequent, high-stake assessments that aim to gauge the quality of students and arrive at an overall grade (assessment of learning).
  - a) **Assessment of knowledge:** MCQs, matching, essays, calculations, problem solving, slides exams, viva.

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- b) **Assessment of skills:** OSCE, practical exams, extended direct observation of students interviewing and examining patients throughout their clinical clerkships.
- c) **Assessment of attitudes and ethics:**
- OSCE
  - Reflection of the attitudes on the students' behaviors by extended direct observation from their teachers throughout their clinical clerkships.

**Multiple choice questions (MCQs)**

MCQs exams are designed to assess the students' knowledge and understanding (knows) as well as the students' intellectual skills (know how) of the basic and clinical sciences relevant to medical practice. They are used to assess multiple levels of cognitive domains (knowledge, understanding, application and analysis).

**Essay questions**

Essay questions are designed to assess the students' knowledge and understanding (knows) as well as the students' intellectual skills (know how) of the basic and clinical sciences relevant to medical practice. Essay questions require an explanation and analytical answer in a sentence, paragraph, or short composition. They are used to assess:

- Students' knowledge and understanding of subject-matter Content.
- Students' abilities to reason with their knowledge of a subject.
- High order thinking ability (application, analysis and evaluation).
- Writing and expressing ability.

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**Types of used essay questions:**

**Restricted Response Questions (short notes):**

Places strict limits on the answer to be given. The boundaries of the subject matter to be considered are usually narrowly defined by the problem, and the specific form of the answer is also commonly indicated (by word such as “list”, “define” and “give reasons”)

**Calculations**

Calculation tests are designed to measure student`s ability to calculate different physical, biochemical, pharmacological and biostatistical measures accurately.

**Slide exam**

Slide examination is designed to assess the students` ability to recognize clinical signs, and assessing students` intellectual skills including: data interpretation, and analysis.

**Clinical exam**

Objective structured clinical examinations (OSCE) are designed to assess the students` professional and practical skills (show how) including;

- History taking skills.
- Physical examination skills and the ability to identify physical signs.
- Communication & professionalism skills (including ethics and maintaining patient welfare)
- Clinical-reasoning and decision-making skills:
  - Interpreting clinical data and generating differential diagnosis.
  - Selecting proper investigations.
  - Formulating management plan and prescribing the suitable treatment.

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**Practical exam**

Practical exams are designed to assess a student's practical skills and laboratory techniques.

**Viva examination by using viva cards**

The viva examination is designed to assess the student's intellectual and communication skills. The examination involves assessing the students' ability to analyze and interpret the results of commonly used laboratory, electrocardiographic and radiological diagnostic procedures as well as their ability to evaluate patients with life threatening conditions.

**Mark distribution**

- Assessment exam marks comprise 20-40 % of the total marks.
- Final written exam marks < 50% of the total marks.
- A minimum of 35% in the final written exams and 60% overall should be obtained in order to pass every single course.