

Medical Education

Designing and Implementation of Electives Training in Competency Based Medical Education Curriculum

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ABSTRACT

Introduction

One of the characteristics of CBME curriculum is introduction of 2-month electives program in which students get an opportunity to differentiate, experience applicative use of knowledge and develop applied skills. Since students have a choice of identifying a topic of their interest for elective training, it is expected to provide a unique learning (by doing) experience (experiential learning) and greater degree of satisfaction.

Methodology

This article was prepared using the NMC Electives Module and searching the relevant published articles. Members of Medical Education Unit and Curriculum Committee were consulted as and when required.

Results

We have suggested a plan for effective implementation of Electives training at institute level. We have also suggested a timeline for implementation of Electives training and also distribution of students in two blocks for 8-week rotation for electives.

Conclusions

Electives complement core curriculum, supplement individual and team-based learning and inculcate organizational capabilities. Furthermore, students can identify their future learning needs. Accordingly, they would customize (select, organize and direct) their study designs to meet their specific individual learning needs. A carefully designed plan would enhance success of the elective program.

Keywords: CBME, Curriculum, Electives, Medical Education.

INTRODUCTION

Elective is defined as an optional course, generally of short duration, undertaken by a student based on his/ her interest. The concept of elective training dates back to as early as 1819.¹ Electives are already part of training in various western universities.²

Why Electives?

This type of training is shown to promote transformative, communicative and instrumental learning.¹ A number of studies have shown that electives provide unique opportunity to a learner for immersive and team-based learning. The learner has choice to identify a topic of his interest and work for it. This phase also provides opportunity to match aspirations with prevailing realities

and how to proceed to achieve success.³ Potential benefits of elective are listed in Table-1.

In India, realizing the potential of electives, the National Medical Commission (NMC) formally introduced them in competency based medical education curriculum that has been implemented from admission batch 2019. In essence, it consists of mandatory 2-months electives (2 blocks of 4 weeks each) posting for undergraduate medical students at the completion of phase-3 part-1. Successful completion of electives (75% attendance and submission of logbook) is required for eligibility to appear in the final MBBS examination. Block-1 shall be done in a pre-selected pre-clinical, para-clinical, basic sciences laboratory or under a researcher in an ongoing research project. Block-2 shall be done in a clinical department (including specialties, super specialties, ICUs, blood bank and casualty).

The NMC also released a module (Module-6) on electives to guide the institutes to implement the electives.⁴ The design, content development and implementation of the electives program shall be planned at institute level as per feasibility and availability of resources. We have prepared a suggestive step-by-step plan for designing and implementation of electives program. It is emphasized that successful implementation necessitates to identify learning needs of students and their aptitudes beforehand so that they can identify, initiate and organize a research project.

Table-1: Potential exploratory opportunities in electives

Opportunity	Description
Experiential learning and lateral thinking to develop spirit of enquiry	<ul style="list-style-type: none"> - Promotion of applicative use of basic sciences. - Exploration of new information (Bio-informative, Artificial Intelligence, block-chain technology) not included in core curriculum. - Identification of community needs, determinants of laboratory testing. - Matching expectations with ground realities. Learning how to respond to societal needs. - Get an immersive experience

Developing organizational and managerial skills	Working in teams, conducting surveys and trials, exploration of human behavior.
Coping with constraints: Time and resources	Limited time of 2-months to complete the project. How available resources can best be exploited to achieve objectives.
Encouraging entrepreneurship in health sciences	Identification of start-ups and determination of their incubation needs and career choice.

We suggest following plan for effective implementation

A: Timing of electives

Considering the frequent delays in admission processes due to COVID-19, the National Medical Commission (NMC) came up with the revised time-table for the years 2021-2024.⁵ The time allotted to electives is not specified in the time table. But, since the admission batch 2019 will finish Phase-3, part-1 training in January 2023, it may be assumed that the students will start the elective training from February 2023, for 2 months or it may be abbreviated skipping Block-1/2 component or the electives may be altogether skipped (for Batch 2019) depending on the prevailing situation. However, for now keeping 2-months electives program in mind, we have prepared a tentative timeline for implementation of elective program at institute level, as shown in Table-2. If not for Batch 2019, this guide may be utilized for designing and implementing the electives program for subsequent batches.

B: The Suggested Structural Plan (Table-2)

1. Medical Education Unit (MEU) / Curriculum Committee (CC) meetings: Implementing any new program in an institute is a cumbersome and time-consuming activity. The MEU and CC members along with the Dean of institute can meet well in advance (January 2022) and decide the course of action for implementation of elective program. A tentative timeline should be discussed. Orientation program should be developed well in time for effective implementation.

2. First orientation session for faculty members (January 2022): The members of the MEU and CC shall arrange for the orientation sessions for the faculty members of the institute to sensitize them regarding this new program. All faculty members should be encouraged to read and understand the NMC Electives Module.⁴ The internal and external preceptors shall be identified at this stage. A

preceptor will be a faculty member who will directly supervise and guide students during their elective posting. In case a student is opting for an elective course outside institute, then a faculty member of the parent institute shall liaise with the external preceptor. Letters requesting permissions be sent to NMC for electives to be done in institutes of other states.

3. Preparations of learning modules, logbooks/portfolios (January-February 2022): The identified preceptors and Head of Departments (HODs) should prepare the learning resource materials and detailed teaching schedules for their respective subject electives. The following details should be included in the schedule:

- Name of the block (Block 1 or 2)
- Name of elective [e.g., Medical Genetics (Block-1) or neonatology (Block-2)]
- Location of training facility (e.g., College, Hospital, Urban Health Centre, laboratory etc.)
- Name of internal/ external preceptor
- Learning objectives of the elective
- Number of students that can be accommodated in a particular elective
- Learning resources for students (books, Journals etc.)
- Daily activity schedule (e.g., ward rounds, operation theatre, case presentation etc.)
- Maintaining of portfolio/ logbook: The portfolio/ logbook shall be prepared by the preceptors.
- Assessment: Formative assessment (attendance, daily activities, logbook submission) and certification of completion for eligibility to appear in final MBBS examination.

Various examples of Block 1 and 2 electives are given in the NMC Electives Module as Annexures.⁴

4. Updating the institute's website (March 2022): Once the subject specific electives modules are ready, the same should be displayed on the institute's website.

5. First orientation session for students (March 2022): Though the elective posting for 2019 batch should start from February 2023, it is preferable to sensitize them regarding this program early. Students must also be made aware of the regulatory requirements regarding attendance, work and time schedule, documentation and assessment requirements for each elective. They should also be informed about the electives available to choose from (internal & external).

6. Developing a plan for allocation of electives (September 2022): By now the students would already be aware of the available electives (internal & external) at their institute. Allocation of electives to students is based on students' choice and the available electives. This process should be completed at least three months prior to the start of electives training. The institute should have a plan ready for allocation of electives so that all students are uniformly distributed and no preceptor or department is overburdened.

There may be a situation where a greater number of students have opted for a particular elective which may not be feasible. In such circumstances there can be counselling sessions for the students so that they may opt for an alternative elective without jeopardizing their interest much. Figure-1 shows a suggestive distribution of students for elective posting (Batch of 150 students).

7. Second orientation session for the faculty members and students (September 2022): The students can meet their preceptors and discuss the requirements (if any) to be fulfilled before elective posting starts. Preceptors can also guide students regarding submission of research (study) plan, approval of scientific committee and IEC where ever needed.

8. Conduct of electives (February-March 2023): The electives should be conducted as per the developed plan followed by assessment, logbook/portfolio submission and certification.

9. Program evaluation: Feedback of the stakeholders is of paramount importance for continuous improvement of a program. Once the electives training for a particular batch is over, formal feedback of the students and faculty members should be taken. This will ensure that the shortcomings are overcome for the next batch. Focused group discussions can be used to take feedback.

Table-2: Suggested timeline for developing electives program

Month	Activity	Responsibility
January 2022	MEU/ CC meetings to discuss the course of action	MEU, CC, Dean
January 2022	1 st orientation session for faculty members and identification of internal and external preceptors	MEU, CC
January 2022 to February 2022	Preparation of modules and learning resource materials. Training of teachers, development of log books and portfolio.	HODs and Preceptors
March 2022	Updating of Institute's website with details of the electives available	Office of the Dean
March 2022	1 st orientation session for students to sensitize them to the elective program and inform them about the electives available to choose from.	MEU, Curriculum Committee

September 2022	Developing a plan for allocation of electives	MEU/ CC/ Curriculum Subcommittees/ Preceptors
September 2022	2 nd orientation of sessions for the faculty members and students and allocating electives to students as per the developed plan. Submission of research (study) plan and presentation by student: Approval of scientific committee and IEC where ever needed.	MEU/ CC/ Curriculum Subcommittees/ Preceptors
February 2023	Block-1/2 electives	Phase 1 and 2 Curriculum subcommittees, Preceptors
Upon completion (last week of February 2023)	Documentation, log book completion, reflection, and presentation	Preceptors
March 2023	Block-2/1 electives	Phase 3 Curriculum subcommittees, Preceptors
Upon completion (last week of March 2023)	Documentation, log book completion, reflection, and presentation	Preceptors

C: Curriculum Governance

The responsibilities of various committees and faculty members are shown in Table-3 below.

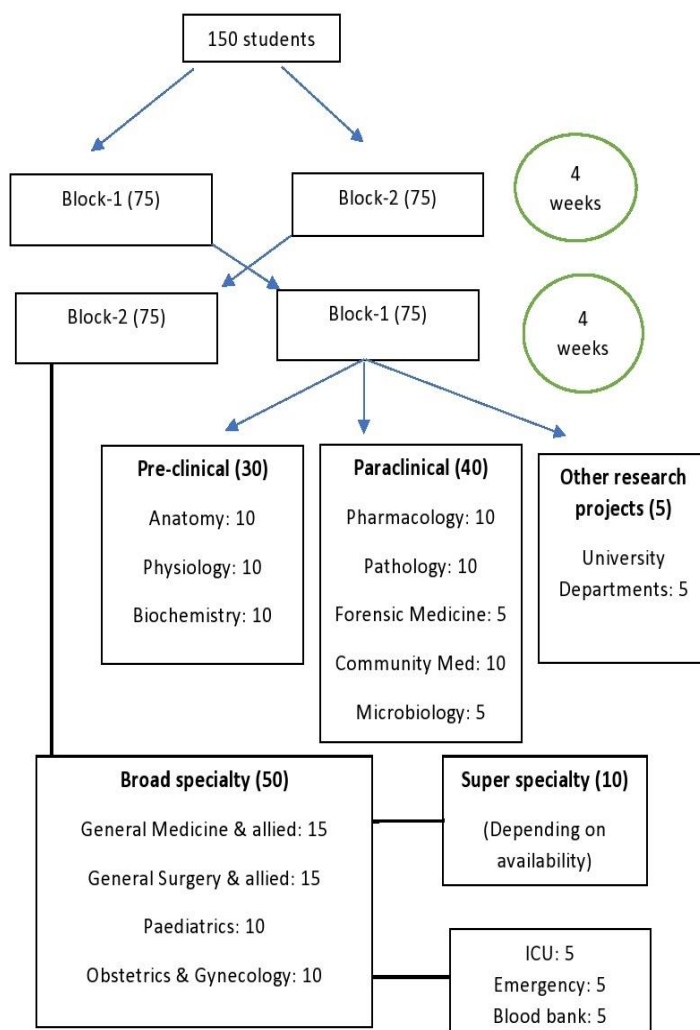
Table-3: Responsibilities of various committees

Name of committee	Functions
Curriculum Committee/ MEU (Headed by Dean of institute)	Responsible for the overall design, conduct, implementation and evaluation of the elective program
Phase 1 and 2 sub-committees	Implementation of Block-1 electives
Phase 3 (part 1 and 2) sub-committees	Implementation of Block-2 electives
Faculty members (HODs, preceptors)	Day-to-day conduct of the program, guiding, supervising and assessing students

Challenges

Repetition of electives every year may lead to students copying previous logbooks/ portfolios, and the whole purpose of electives may be lost. Time constraints, intervening examinations, student sickness absenteeism, students' safety on external rotation, coping with stress upon failure, incongruence between expectations and reality may be some of the limitations of the program. A few questions remain to be addressed. Should each and every student need to complete elective project individually or he/she can collaborate in groups of 2-3 or more students? This is important for institutes with 250 admissions. Furthermore, it would be easier for preceptors to guide a small group who shall complete a given project than guiding individual student.

Figure-1: Suggestive distribution of students in two blocks for 8-week rotation for electives



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