

## Developing and Implementing Integrated Modular Curriculum for Pre-Clinical Sciences in Medical Institutes; Current Challenges and Solutions

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In the complex world of medical education, the term “integration in undergraduate medical curriculum” has different meanings for different institutes. The reason is that this concept needs to be understood in the pragmatic paradigm. Pragmatism is defined as “a reasonable and logical way of doing things or of thinking about problems that are based on dealing with specific situations instead of ideas and theories”.<sup>1</sup> By the time of this writing, faculty members of most public and private sector colleges have been exposed, either directly or indirectly, to integration in the undergraduate medical curricula. A common understanding of integration is teaching the sciences together in systems-based modules and assessing these concepts in blocks. This is a very basic idea as the curriculum is a much broader concept.

According to Kern,<sup>2</sup> the first step should be Problem Identification and Needs Assessment when developing curricula. For most institutes, the need for integration is there because it is a newer, in-vogue method, and the older traditional curriculum is no more applicable. Though true to some extent, due to recent developments in medical education, newer teaching and assessment methodologies are much better and should be adopted but decisions on what to adopt must be based on practical considerations. The students of the older “traditional” curricula have achieved heights of success so simply saying that the older system is flawed would not be true. Needs assessments should be conducted diligently by the curriculum committee keeping in view the availability of trained medical educationists, the readiness of administration for change, the level of faculty training, and the acceptability of students for change.

The next step is targeted needs assessment, which translates to the development of goals and objectives. Currently, in most institutes, the archaic ex-Pakistan Medical & Dental Council (PM&DC) curriculum is taken as standard, broken down, and spread into systemic modules without considering if the content is relevant to today's day and age. Anatomists still

prefer teaching and assessing detailed osteology, structural relations, radiographs and are often opposed to the incorporation of clinical anatomy, correctional anatomy, and newer imaging modalities like Computerized Tomography (CT) and Magnetic Resonance Imaging (MRI) in their curricula. Biochemists also like to retain the outdated techniques of nutrient estimations and are often reluctant to include recent advances in genetic techniques in their teaching and assessment. The role of the curriculum committee at this step should be to define the knowledge, skills, and attitudes required by the doctor of today, ensure that they are included in the curriculum, and do away with the obsolete components.

After this, educational strategies and their implementation plan need to be determined. There is a lot of evidence that small group teaching methodologies especially with a clinical focus such as Problem Based Learning and Case-Based Learning have advantages over the traditional large group sessions.<sup>3</sup> This is because they are more student-oriented and better for higher cognitive order learning. However, the human resource, logistics, and training required for these sessions are also higher. In addition to the introduction of small group sessions, large group lectures can also have increased productivity by using interactive and flipped classroom techniques.<sup>4</sup>

It is said that assessment drives learning. In an integrated curriculum, the focus is more on formative rather than summative assessment. Module and Block exams are designed to facilitate continuous learning but, in most institutes, they don't give proper feedback to students on their formative assessments. Furthermore, the culture of send-up exams as eligibility for final summative exams persists as old traditions are hard to do away with. This results in a lot of formative assessments with no feedback for improvement. It is suggested that the module exams should be true formative assessments with feedback for improvement and block assessments should be considered as eligibility for final summative exams

doing away with the sent-ups.

Each tool of assessment has its strengths and weaknesses; therefore, using a wider variety of tools results in a more comprehensive assessment. However, for undergraduates, the focus should be more on the breadth of knowledge and acquisition of clinical skills. Therefore, the written assessments should have more Multiple-Choice Questions rather than Short Essays. Objective Structured Practical Exams should focus on clinical and applied knowledge rather than practical theory.

The mechanism of developing and handling examination material is also very important. Faculty must be trained to formulate quality items according to the table of specifications with marks distribution and key. Items should then be evaluated by a pre hoc assessment review committee with internal and external faculty members along with medical educationists and banked after modifications. Banking should be done in a secure area with coding so that they can be sorted and accessed for the preparation of assessments. After assessments are conducted, they must undergo a post hoc review to ensure reliability. Decisions regarding retention and modification of items should be based on item analysis.

A key area of the curriculum that is mostly ignored is program evaluation. As the curriculum is an ever-evolving document, modifications for quality enhancement will only be possible when regular feedback is collected and analyzed by the Medical Education and Quality Enhancement Cells. Reports generated by these departments should be discussed in curriculum committee meetings with recommendations that should be reflected in the curriculum. In addition to formal summative evaluations, regular formative evaluation meetings should also be conducted to address issues during the program.

The challenge of successfully developing and implementing an integrated modular curriculum boils down to two key areas: an empowered medical education department and a formal faculty development program. Most institutes now have enough medical educationists to bring about this change. However, because it is a task that the faculty needs to do often in addition to their primary teaching and patient care duties, they must be encouraged, empowered, and facilitated by the administration. Faculty development in both core and soft skills is also essential. Failure to do so often results in resistance to change, disagreement, and frustration in

the faculty. This eventually impedes the successful implementation of the integrated curriculum. Faculty members must be taught leadership, decision-making, and teamwork so that they can effectively plan and conduct meetings. As the role of a teacher changes from deliverer of information to twelve roles as described by Harden,<sup>5</sup> faculty must be trained on how to manage stress and time management effectively. Teaching them emotional intelligence will lead to reduced conflict, efficient teamwork, improved mental health, increased job satisfaction, and eventually better performance.

In conclusion, I believe that the archaic traditional medical curriculum is not applicable now and must be replaced by an integrated modular curriculum indigenously developed by medical teaching institutes. It should be tailored according to the vision, goals, and physical resources of the organization. For this, establishing fully equipped Departments of Medical Education with proper infrastructure, financial and human resources is vital.<sup>6</sup> By following the suggestions in this article, the transition from traditional to integration can be much smoother and more rewarding for all the stakeholders.

## References

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