

Editorial

Integrated Teaching : A Less Trodden Path

The Medical Council of India (MCI) has initiated some changes in the curriculum as part of its Vision 2015 document. It is indeed a welcome move. The suggestion of Integrated Curriculum is one of the most important issues. They require major adjustments in pre-clinical and para-clinical disciplines to achieve approximately 60-80 percent integration. Prof RL Bijlani, a celebrated physiologist and medical educationist wrote an editorial “Too little Too late” in 1998 in IJPP. He mentioned that we have been discussing integration in medical education for years still it has not been implemented (1). There must have been reasons for such a delay in adopting integrated curriculum. It is worthwhile to reflect on these issues.

The rationale of Integration

Almost all medical colleges in our country follow traditional medical undergraduate curriculum which is comprised of subject based teaching. It means teaching various subjects in isolation and without paying attention to their correlation with other subjects. Generally, the departments are more concerned about completing the syllabus according to their own time schedules. This results in fragmented teaching during the course. The examination is also conducted in fragmented subject based assessments. Towards the end of medical course the student is required to integrate all learning for application purposes. Thus, the traditional discipline based curriculum largely doesn't facilitate the student to apply the knowledge in various contexts. The integration of different subjects remains poor. The solution for such problem is to provide a different curricular approach known as 'Integrated Curriculum'. The integrated teaching makes learning more meaningful and relevant. Integration eventually breaks down the artificial barriers among different disciplines. According to Harden et al (1984) the “Integration is the organization of teaching matter to interrelate or unify subjects frequently taught in separate academic courses or departments” (2).

Integration entails coordination and cooperation among teachers of various disciplines to teach important core topics as a combined activity. The purpose of integration is to increase the effectiveness and efficiency of the teaching-learning process. The Integrated curriculum may be adopted by medical institutions with some sincere efforts.

Various approaches towards curricula

The traditional curriculum (or called discipline based curriculum, subject based or conventional curriculum) approaches the teaching-learning process in a compartment based structure. Another type of curriculum called Problem Based Learning (PBL) carries the main focus on 'problems' and in order to learn and solve the problem, the students need to discover/learn various related subjects. The PBL touches the peak of the integration. From the year 1992 onward under the leadership of Prof Usha Nayar, the then chief of KL Wig Centre for Medical Education and Technology (CMET), AIIMS, New Delhi made some serious efforts to introduce the PBL in pre-clinical sciences, however, the efforts could not yield much fruits because the departments found it difficult to fit it in existing conventional curriculum. Currently, only Biochemistry conduct some biochemistry topics by way of PBL approach. As such there are several reports suggesting that the PBL has not worked well in old existing medical schools, especially in Asian subcontinent. It gave birth to the third type of curriculum called Integrated Curriculum. The integrated curriculum falls in between the two and here the focus is to teach systems or organs rather than disciplines. Every curriculum has its

strengths and weaknesses. The curriculum having more than one approach is called hybrid curriculum. Thus we need to reflect and evolve a system which balances between the components of discipline based curriculum and PBL curriculum. Integrated curriculum can be designed with some modification in order to achieve better medical education.

The other side of coin

Although much has been talked about integrated curriculum, but there are some ifs and buts before we implement it. It is always good to examine the two sides of coin in medical education. In fact, one should avoid making drastic changes in the curriculum in an existing institution. The medical education change must be slow and compatible with existing set up.

Dahle et al (2002) commented that "Integration probably leads to better retention of knowledge and the ability to apply basic science principles in the appropriate clinical context". However, it is difficult to imagine what kind of material the student will be applying to clinical context in absence of basic in-depth knowledge.

Such facts have been confirmed in one study from Hong Kong, where authors found that "the student from conventional stream are found to have better knowledge about basic preclinical sciences" (4). They also stated that the different types of curricula adopt different ways of learning, however, there is no evidence that PBL (which is best types of integrated curriculum) provides improved learning when compared with conventional curriculum.

From the feasibility point of view I am intrigued by the conclusion made by Franzie L. Loepp regarding the implementation of integrated curriculum. He says "the prospect for moving to the implementation of an integrated and/or interdisciplinary curriculum on a nationwide basis is bleak" (5). Lots of efforts are required in a systemic manner for a vast country like ours.

The important feature of integrated curriculum is that it always emphasizes the "basic to applied" paradigm and not "Basic-to-Basic" paradigm. The Basic-to-Basic paradigm of learning refers to applying knowledge to explain two basic facts by reasoning. Such deliberation explains how things work in human body or how the phenomenon happens. Basic-to-Basic application paradigm is essential to produce experts, scientists, and inquisitive minds. In order to retain emphasis on Basic-to-Basic application one needs to make procedural changes in teaching methodology. It means that there should be a physician within the heart of a physiologist and vice versa. Thus, integration should be integral part of each teaching at all levels. Therefore, while teaching Physiology, appropriate clinical application must be told and explained. This paradigm will surely help research the very basis of advancement of all sciences.

As such there are only limited schools which are pursuing the integrated curricula. I am not aware of any studies which have measured outcome of integrated curricula and conventional curricula in terms of residents (postgraduates) performance. There is need to carry our multiple studies in such direction.

Integration with right proportion

Integrated curriculum involves the understanding of the principles and levels of integration. We need to understand the challenges involved in implementation of an integrated teaching program. The faculty and administration must adopt appropriate strategies and capacity building approaches for implementation of integrated teaching. Sincere efforts are required to develop an integrated module for a disease/organ system block. The integration will be incomplete without aligning assessment methods to integrated learning objectives. Thus, there is need to change the mindset of the faculty working in existing institutions.

There is need to analyze the problems concerned with conventional curriculum. We should not take refuge of minor problems and seek their solution in dismantling the whole or shake up the very base of the foundation. If there are problems they should be tackled individually and focused on the core issue of the problem. There is need to innovate suitable teaching methodology to implement integrated curriculum. At times the problems are purely imaginative (e.g. the students are not exposed to contextual learning in traditional curriculum). The best for us is to improve teaching-learning process. Each class of pre- and para-clinical subjects should include the integrating threads for clinical applications. The teacher should also start the story from very basic concepts (connecting to their previous learning experiences). Therefore, each class of each block of lectures itself should be an integrated and self contained capsule. It is the teacher's responsibility to leave threads connected to this capsule which the students will pick up later. In this process there may be some threads which excite and stimulate the research temperament of some to pursue research in future. It is important component of medical education. Such method of imparting learning may be called "micro-integration". Therefore, let us focus on empowering the teaching-learning equation along with right proportion of hybridization of curriculum. Thus, bringing changes are always not very easy.

Robert Frost in one of his poems beautifully describes that walking along the less traveled path may not be simple but it makes huge difference.

*I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I--
I took the one less traveled by,
And that has made all the difference.*

(*The Road Not Taken* by Robert Frost)

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