

Integrated Medical Curriculum in Pakistani Educational Environment its Merits and Demerits

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ABSTRACT

The majority of medical school curricula have been merged both horizontally and vertically, with clinical and fundamental sciences integrating vertically. This has contributed to a more complete education. The Flexnerian curriculum is being phased out to make room for the merging of basic sciences and clinical sciences, which are now taught concurrently across the curriculum. This modification was made to allow for integration. We have developed an alternate approach of integration in which the teaching of the sciences is displayed on the vertical axis and the defined learning outcomes are depicted on the horizontal axis; this strategy is then adopted throughout all courses. We believe that it is not sufficient to merely integrate the basic and clinical sciences in the field of medicine; rather, it is vital to lay an emphasis on the importance of humanism in addition to the public health sciences. In other words, we believe that merely integrating the basic and clinical sciences in the realm of medicine is insufficient. Integration of the basic and clinical sciences, humanism, and health population into the curriculum's vertical axis is essential not only in the early years of the programme, but throughout its entirety. This involves the use of problem- or case-based active teaching strategies in small groups.

Place of Study: Rai Medical College Sargodha

Study Duration: January 2022 to June 2022

Study Design: Empirical research

Conclusion: In conclusion, an integrated medical curriculum has both its positive and negative aspects to consider. An integrated curriculum, on the other hand, can offer medical students with a thorough grasp of the human body, as well as improve critical thinking and foster interdisciplinary learning, provided that it is done successfully.

Keywords: integrated curriculum types, sciences integration, curricular architecture and development

INTRODUCTION

The subject of whether a medical curriculum should be interdisciplinary or interdisciplinarity is still up for debate. An integrated curriculum is defined as "education organised in such a way that it cuts over subject matter lines, bringing together various components of the curriculum to focus on broad areas of study."

Since the time of Flexner, the technique used to educate medicine has stated that students should first study basic and biological sciences before moving on to clinical sciences; yet, this is not at all how patients are presented. It is ideal to encourage students to think like doctors as soon as they enroll in medical school, which is one of the key criticisms leveled against this technique. The target of the complaint is the fact that students will not recognize the relevance of basic and biological sciences applied to clinical practice.

When placed within the framework of clinical and professional practises, students find integration to be more engaging and meaningful. Integration is of the utmost importance in medical education as a direct result of this. The vast majority of educational programmes implement vertical integration, a form of curricular reform. The purpose of this type of change is to better coordinate course material. Components of this type of change include basic and clinical sciences, early clinical experience, clinician–scientist collaboration, and the introduction of science in later years of the course. This is definitely an advantage, but it is based on the perspective of a biologist on the progression of disease from a healthy state.

Architecture of an Integrated Medical Curriculum: The term "integrated medical curriculum architecture" refers to the planning and execution of a medical school's educational programme in such a way as to offer students with a holistic and well-balanced foundation in medical knowledge. In order for students to be able to develop the critical thinking and problem-solving abilities essential to become competent and compassionate healthcare providers, it is aimed to offer them with a deeper grasp of the intricate interrelationships that exist between the numerous medical disciplines.

The following are examples of components that are typically included in the architecture of an integrated medical curriculum:

- 1 The Foundational Sciences: These are the foundational courses that cover the fundamental principles of medical science, such as anatomy, physiology, biochemistry, pharmacology, and pathology. These courses are required for all future medical students.
- 2 Clinical Sciences: The primary focuses of these classes are the diagnosis, treatment, and management of various medical illnesses and diseases. Clinical skills training, patient interactions, and rotations through a variety of medical specialties are all components of these programmes.
- 3 The Social Sciences: Courses in this area encompass the social and behavioural components of medicine, such as cultural sensitivity, communication skills, and medical ethics. They also examine the gaps that exist in healthcare provision.
- 4 Research and Scholarship: The skills and knowledge required to do research, critically analyse medical literature, and keep up to current on the newest medical developments are taught in these classes, which offer students with the opportunity to develop these abilities.
- 5 Integration and Interdisciplinary Training: This component brings together the various other components of the curriculum to foster the integration of knowledge and abilities across different medical disciplines. As a result, the student's capacity to diagnose and treat complicated medical diseases is increased.

An integrated medical curriculum should have a structure that is both flexible and adaptive, allowing for continuing evaluation and improvement to ensure that it satisfies the requirements of the students and remains current with developments in both medical knowledge and clinical practice.

Medical Curriculum Models

Horizontal Curriculum: In the context of education, the term "horizontal curriculum" refers to a programme that is structured around a group of subjects or disciplines that are interrelated. Students that enrol in a Horizontal curriculum often study classes

in a variety of medical specialties, such as anatomy, physiology, pharmacology, pathology, and clinical medicine, in a manner that is distinct and unrelated to one another. The development of an in-depth grasp of each subject area is emphasised more than an examination of the ways in which these areas are connected to one another. Students who lean more towards a more conventional and subject-area-focused method of education could do well to follow a course of study structured like this one.

JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
UNIT 1 12 weeks										UNIT 2 12 weeks	
UNIT 3 12 weeks			ELECTIVE 6 weeks			HOL. 4 wk		UNIT 4 12 weeks			ELEC. 4 wk
UNIT 5 12 weeks			UNIT 6 THE CLERKSHIP—42 weeks								
UNIT 6 2000-2001			Graduation REVISION								

Figure 1 Horizontal integration: "The revised curriculum of the M.D. program at McMaster University" (revised in Hurdle et al. 1999). In this early representation of integrated curriculum from McMaster University (Hamilton, Ontario, Canada), horizontal integration is demonstrated through the combination of the pre-clinical basic science disciplines into units. The organization of material across disciplines over a finite time – not throughout the entire curriculum – represents horizontal integration.

Vertical Curriculum: In contrast, a vertical curriculum is organized around a set of medical themes or issues that cut across different disciplines. In a vertical curriculum, students learn about a specific medical condition or problem, such as diabetes or hypertension, in a comprehensive and coordinated manner. They explore the basic science, clinical science, and social science aspects of the condition, as well as the practical skills needed to diagnose and manage it. This type of curriculum emphasizes integration and teamwork, preparing students to work collaboratively with other healthcare professionals.

Some medical schools use a hybrid approach, combining elements of both Horizontal and vertical curricula to create a curriculum that meets the needs of their students and the requirements of the medical profession. In these cases, the curriculum may be structured around a set of core themes or issues, with Horizontal courses providing a deeper understanding of the underlying disciplines.

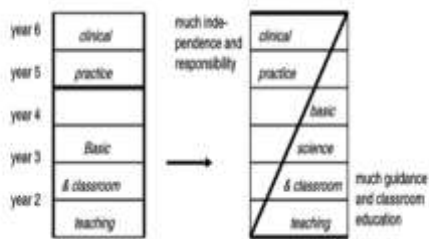


Figure 2 Vertical integration: "The traditional H-shaped medical curriculum replaced by a Z-shaped curriculum model" (Wijnen-Meijer et al. 2001). On the left, the H-shaped model represents the standard curriculum format in which basic science education precedes clinical education, with a distinct separation of the two. On the right, the Z-shaped model described by Wijnen-Meijer and others outlines a progressive introduction to clinical practice while maintaining a persistent basic science component throughout all years of a curriculum. This is an example of vertical integration.

Spiral Integrated Medical Curriculum: The Spiral Integrated Medical Curriculum Model is a similar approach to curriculum design, but it specifically applies to medical education. It aims to provide medical students with a comprehensive and interconnected understanding of medical knowledge and skills that build upon each other over time.

In this model, the medical curriculum is divided into several core subject areas, such as anatomy, physiology, pharmacology, pathology, and clinical skills. Each subject is taught multiple times throughout the medical program, with increasing complexity and depth each time it is revisited.

The Spiral Integrated Medical Curriculum Model emphasizes the integration of basic sciences and clinical skills, with students learning how to apply theoretical concepts to real-world clinical scenarios. It also encourages active, student-centered learning, with students engaging in problem-based learning, case-based learning, and other interactive teaching methods.

This model has been praised for its ability to develop medical students' critical thinking and clinical reasoning skills, as well as their ability to integrate knowledge across different subject areas. However, it also requires a significant amount of coordination and collaboration between different departments and faculty members, and may require changes to traditional teaching methods and assessment tools.

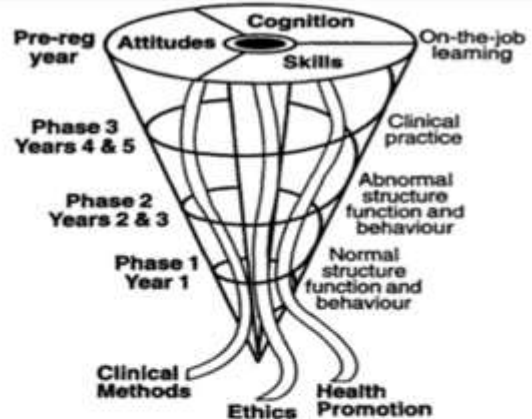


Figure 3 The spiral integrated curriculum model at the University of Dundee, Dundee, UK (Harden et al. 1997). This model illustrates a spiral curriculum in which the basic and clinical sciences are continually integrated as students' progress from learning the "normal" to the abnormal before the significant clinical portion of their education. At the top of the cone are three domains of learning – cognition (knowledge), skills, and attitudes – that are a focus of all levels of the spiral. Additional themes persist throughout all years – clinical methods, ethics, and health promotion – further emphasizing an evolution and subsequent broadening of physician education beyond the scope of this Guide.

The learning model known as SPICES: In the field of medical education, the SPICES learning model serves as a conceptual foundation for the creation of curricula. The concept was created by Harden and his coworkers in the late 1990s. It is predicated on six essential components, each of which is denoted by a letter in the acronym SPICES. These components are as follows: The shift in emphasis from teaching to learning is what is meant by the phrase "student-centeredness." Students should be actively involved in the learning process, and the curriculum should be constructed with the needs and interests of the learners in mind. The use of actual problems and hypothetical situations from the real world as a means of instructing pupils is what is meant by the "problem-based" component. Students enhance their abilities in critical thinking, problem solving, and working together on a team as they work together in small groups to identify and solve challenges. Integration: Integration is the process of connecting together various fields of study and areas of study within the curriculum in order to foster a more comprehensive understanding of medicine. This can be helpful in reducing the amount of repetition and redundancy in the curriculum and can inspire students to make connections between different areas of knowledge. Community-based education is characterised by the integration of experiences drawn from the real world into the academic programme. This is accomplished by having students participate in community-based initiatives and clinical internships. Students may benefit from developing a better knowledge of the larger social and cultural contexts of health and medicine with the help of this. Students have the opportunity to participate in

electives, which can take the form of either courses or experiences outside the normal scope of their education. Students have the chance to explore areas of interest or develop specialised abilities through the use of electives in their curriculum. Systematic: This aspect entails taking an organised approach to the development of the curriculum, as well as its execution and evaluation. A methodical approach ensures that the curriculum is well-designed, well-implemented, and periodically evaluated to guarantee that it satisfies the requirements of the many stakeholders and the requirements of the students. Integrated Medical Curriculum An integrated medical curriculum is a method of instruction that combines numerous subfields of medicine, such as clinical medicine, anatomy, physiology, pharmacology, and pathology, into a unified educational framework. The following is a list of some of the advantages as well as some of the cons of an integrated medical curriculum:

Advantages: All-encompassing education Medical students can achieve a better all-encompassing grasp of the human body and the roles it performs if their education follows an integrated curriculum. They are able to build a more holistic approach to patient care by studying different fields concurrently, which is beneficial. 2. Improvements in critical thinking The integrated curriculum encourages students to think critically, analyse material, and apply their knowledge to real-life circumstances, which leads to an improvement in critical thinking. Students are better prepared to find solutions to difficult situations when they learn to approach medical education from this perspective. 3. Learning across disciplines: An integrated curriculum provides students with the opportunity to gain knowledge from a variety of medical subfields, which ultimately results in improved collaboration and communication among healthcare professionals. 4. Efficient use of time An integrated curriculum can lessen the amount of material that is covered in many classes, which leads to a more effective utilisation of time on the part of both the students and the instructors.

Disadvantages: 1. Difficulties in implementation The process of putting in place an integrated medical curriculum calls for a large amount of work, time, and money. To guarantee that the curriculum is coherent and effective, it may be challenging to coordinate the various fields of study, the professors, and the resources that are available. 2. An integrated curriculum may not be able to give students with the in-depth understanding of specific subjects that is required for certain specialisations. This may prevent students from pursuing those specialisations. 3. Obstacles in the assessment process The assessment of an integrated curriculum can be difficult since it demands the creation of new assessment methods that can evaluate students' grasp of complicated topics that are intertwined with one another. 4. Resistance to change: When adopting an integrated curriculum, resistance to change can be a substantial barrier because the implementation of the new curriculum may entail adjustments to the existing departmental structures, faculty roles, and teaching methodologies.

CONCLUSION

This encounter has several effects. Medical curriculum change is complex and difficult. Yet, if the academic community takes the time to analyse and understand the reform's challenges, it may be more successful in implementing the new curriculum practice.

Second, the process of designing curricular integration as a component of the reform should begin with an in-depth understanding of the context in which it will be implemented. This understanding is crucial in order to achieve success. In our circumstance, it was vital to change the concepts of health and disease before the curricular integration design could be constructed. A curricular practice would not have been appreciably altered by a reform that did not entail such a shift. Therefore, medical students must be taught differently if health and illness change. The final step in analysing curricula integration should be collecting data on the process's problems and potential using a number of methods. This technique may yield information into curricular integration implementation that can inform changes.

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