RESEARCH ARTICLE

Probing in the complexities of the integrated undergraduate medical curriculum: A qualitative exploratory study

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Abstract

Objective: To explore the perceptions of the faculty regarding the level of curriculum integration and their interpretation of the integration ladder in achieving the complex process.

Method: The qualitative exploratory study was conducted at Islamic International Medical College Islamabad, University College of Medicine and Dentistry Lahore and Rehman Medical College Peshawar, from March to August 2018. The participants were the faculty members involved in the designing and implementation of the integrated curriculum in these institutes. The semi-structured interviews were audio-recorded, transcribed and analysed using Braun and Clarke's thematic content analysis.

Results: Of the 18 faculty members, 6 (33.3%) belonged to each of the three institutions. Four themes identified were: curriculum planning, an uphill task; dream versus ground reality; moving up and down the ladder; and teamwork in the paradigm shift. There were different perceptions of the level of integration among faculty members within the same institute. The level of integration ranged from 5-9 in different phases of the curriculum. The processes included all the teamwork steered by the departments of medical education.

Conclusion: Although Harden's integration ladder is a useful tool, curriculum integration is an inherently inconsistent and complex process that does not follow a simple hierarchical continuum of integration and requires a teamwork. Identifying the patterns of integration in different phases of the curriculum might be more practical than just determining a single level of integration in the whole curriculum.

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Introduction

Historically, the medical curriculum had been subjected to change as the definition of health and illness changed with time.[1] The medical curricula undergo revisions, modifications and dynamic changes worldwide in the developed world,[2] while the developing countries are still experiencing various challenges.[3] On a broader scale, integration in education is defined as "intentionally uniting or meshing of the discrete elements or features".[4] There is a vast literature discussing integration in education as the "operational concept" where fragmented areas of knowledge are intentionally combined. Still, there is a dearth of literature that suggests a proper organisational framework to bridge the gap between theory and practice. The literature proposes that "integration" is not a goal to achieve but a strategy to develop curricula.[5] This strategy has to be applied carefully to achieve maximum benefit and the desired outcome.[5,6] Curriculum integration is a complex process (Figure) and is perceived differently by the stakeholders of medical institutions.[7] Various models and strategies have been listed to achieve medical curriculum integration, but accomplishing the task in all phases of the curriculum is not well defined by existing literature. The integration level may be different from system to system in a system-based curriculum.[8] The majority of the medical institutions in Pakistan are following traditional, discipline-based curricula.[9] The interpretation of integration varies from institute to institute and surprisingly from individual to individual.[10]

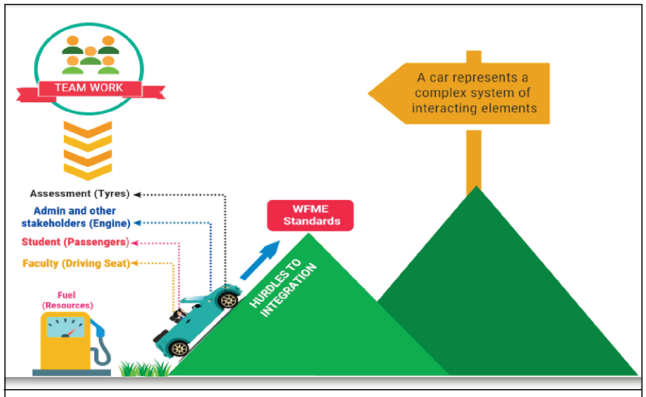

Figure: Symbolic representation of the complexity of curriculum integration.

Harden's integration ladder is usually taken as a standard

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by institutions to start with curriculum integration. However, it is not that straightforward, and a single step on the ladder does not necessarily mean that the process of integration at different levels of a programme, a course or disciplines and departments, simply correlate to that step.[9] The term "ladder" may also be misleading as a ladder always needs to be climbed up, so the researchers may argue that whether integration also needs to follow the similar "climbing-up pattern". If this is not like that, then it might cease to be the shape of a ladder in the first place.

The current study was planned to explore the perceptions of the faculty regarding the level of integration and their interpretation of the integration ladder in achieving the complex process of curriculum integration.

Subjects and Methods

The qualitative exploratory interview-based study was conducted at Islamic International Medical College Islamabad, University College of Medicine and Dentistry Lahore and Rehman Medical College Peshawar, from March to August 2018. The colleges had implemented an integrated undergraduate medical curriculum for a minimum of three years. After approval from institutional ethics review committees of the institutions under study, faculty members from the medical schools were enrolled using the purposive sampling technique, which ensures that information-rich cases are selected for in-depth collection of data.[11] The subjects were approached via the gatekeepers;[11] the respective departments of Medical Education. Those included were faculty members who had done a Masters' or at least a diploma or a certificate course in medical education, and who had been involved in the process of planning and implementation of integrated undergraduate medical curriculum for at least two years. The faculty members who did not volunteer to participate were excluded.

After taking informed consent from the subjects, semi-structured interviews were conducted using a questionnaire and guideline (Table-1).[12] A single interview lasted 20-30 minutes.

The interviews were audio-recorded, and the participants were assigned codes to maintain confidentiality and anonymity. Leading questions were avoided to get unbiased and non-modified information. Interview probes were used to get in-depth details as and when required. The audio-recorded interviews were later transcribed verbatim and the audios were sent back to the participants via e-mails for their record and verification. The data were then transferred to ATLAS.ti version 8, which is a qualitative data management software.[13]

The interview transcripts were analysed under the conceptual framework of Harden's integration ladder, using Braun and Clarke's six phases of thematic content analysis.[14,15] Initial coding process yielded 136 codes. The second cycle of coding led to the generation of 56 codes.

Results

Of the 18 faculty members, 6 (33.3%) belonged to each of the three institutions (Table-2). Four themes identified were: curriculum planning, an uphill task; dream versus ground reality; moving up and down the ladder; and

Table-1: Interview guidelines.

Interview questions	Interview probes
What do you understand by "curriculum integration"? What was your target level of integration while designing the curriculum?	Any model did you follow to achieve a desired level of integration.
How did you decide about setting the target of achieving a level of integration? Who was the deciding authority? Why do you say (how do you justify) that you are at the stated level of integration?	The steps that you are taking to support your claim.
How did you achieve your target level of integration?	What processes that you underwent while trying to achieve the target level of integration. How did you connect the fragmented pieces of information of various subjects to deliver the information holistically? How did you Integrate clinical knowledge or clinical cases in the modules of basic medical sciences?
What complexities and challenges did you face while designing the integrated curriculum?	As a curriculum planner, did you face the challenge of what should be included and what should be eliminated from the curriculum? Formation and functioning of curriculum committees. Engaging the faculty.

Table-2: Characteristics of the faculty members.

Institute	Gender		Ø Age in years (years, min-max)	
	M	F	M	F
Institute AI	3	3	42	40
Institute BU	1	5	45	44
Institute CR	4	2	46	43

Table-3: Major themes and their subthemes.

Themes	Subthemes
Curriculum planning; an uphill task	Ambiguous minds Multiple schools of thought Setting the goal Dealing with the content
Dream versus the ground reality	Looking back at things Faculty perceptions
Moving up and down the ladder	Lack of uniformity in the levels of integration Clerkships: lower level of integration
Teamwork in the paradigm shift Taking faculty on board Stepwise modules development Coordinated efforts to implement	Reorganising the departments

teamwork in the paradigm shift (Table-3).

The first theme was curriculum planning, an uphill task. Although the higher authorities had decided to shift to an integrated curriculum, fears of change marked the planning phase.

- *003 R: The people were afraid of change, on the part of students, the faculty, as well as the administrators. But this was a vision of our management that we have to switch from the traditional to the integrated curriculum.*

The stakeholders were not on the same page and were not vibrant in their decision. They wanted to implement the change, but they were afraid of bringing a high-impact educational reform. The fears overdrove the energy and enthusiasm that was the need of the hour.

- *006R: Then, the stakeholders, the non-medical stakeholders, you see, they were not aware of the true spirit of integration.*

There was debate as far as following a model for curriculum integration was concerned. Most of the faculty members had a clear concept of horizontal and vertical integration but were not able to differentiate between various levels of Harden's ladder.

- *005R: …., but people were not aware and were not clear, what level of integration we were going to achieve.*

Faculty had a perception that planning a higher level of integration would be the best.

- *006RM: The best thing is to achieve Harden's level 10/11.*
- *002UC: As better as we can achieve. There is no single set target, the higher the better. Higher level integration is better for us.*

The second theme was dream versus ground reality. The faculty aimed at planning a curriculum to the highest level of integration, but when it came to the implementation phase, things were quite challenging, and the institutions had to revisit the decisions. One of the institutions designed the curriculum up to level 9 of the Harden's ladder and then it had to revert to lower levels because of the circumstances and the resistance they had to face from the busy clinical teachers.

- *002R: When we first implemented this new curriculum, it was level 9, but it was reverted to level 7.*
- *002R: After the curriculum had been implemented for two or three years, then it was reverted and the main reason was that the faculty was not ready, the senior faculty especially, they were not really…. They were not at all motivated.*
- *002RM: ... So, in designing maybe we reached level 8 at times, not completely level 8 but some aspects of it. Then we had to regress and come back. So, implementation-wise I think it is level 5 or level 6….*

The third theme was moving up and down the integration ladder. Different patterns of integration were present in various segments of the curriculum. Faculty members had the perception that integrated learning goes well in the early years of the medical studies, but, in the clinical years, the situation becomes quite tricky as the clerkships start. Mostly the integration is multidisciplinary in well-established modules, but not in all the modules. When it comes to clerkships, they are sometimes totally discipline-based.

- *002RM: …but the integration for basic sciences in the clerkships or in the final year, it does not exist because there is no integration there.*
- *006R: …and the clinical side suppose when students come to the medicine, then only medicine starts. When they come to the surgical side, only surgery starts…so, it is not total integration.*
- *004R: …. and at clerkships, we also have to deliver discipline-based teaching, so we are at level 9 in fragments, but at most of the places, we are still at level 6 or 7.*

So in the case of clerkships, the level of integration fell below level 5, which is the minimum level of integration.

The fourth theme was teamwork in the paradigm shift. The

processes that a medical school had to undergo to reach the desired target included departmental meetings, formulating learning objectives, taking faculty on board, dealing with the administrative challenges, step-by-step module development and regular curriculum committee meetings. Department of Medical Education had a central role in all these processes.

- *006UC: "…we did have a lot of faculty training sessions and numerous workshops and seminars."*

The internal fears that the faculty faced were the probable challenge to their authority, reduction in subject content, overburdening of faculty, especially on the clinical side, and changing themselves from didactic to interactive teaching.

- *003R: "Lot of meetings and lot of negotiation was done with them, and they were given an opportunity that neither their content will be reduced, nor their position will be declined or reduced. Neither their authority will be challenged…"*

The non-medical stakeholders needed to be educated about the integrated curriculum as they were only interested in the annual results of their institutions rather than having a vision of long-term professional doctors.

There were different perceptions of the level of integration among faculty members within the same institute. The level of integration ranged 5-9 in different phases of the curriculum.

Discussion

This study aimed at exploring the perceptions of faculty about the level of integration in their institutions and all the processes they underwent during the planning and implementing of the integrated curriculum. It was found that curriculum integration was not a straightforward hierarchical organisation of the content; rather, it was a world of continuously interacting elements which needed to interact in an organised manner to produce meaningful results. The persons leading this educational reform in medical colleges of Pakistan mostly relied on Harden's integration ladder to achieve curricular integration. The faculty had difficulties in identifying and achieving the exact level of integration because of overlapping in different steps of the ladder with ambiguous boundaries.[9]

The study findings are consistent with literature in that designing and implementing an integrated curriculum is an uphill and complex task[6,16] in which the institutions are usually more concerned with the planning activities rather than focus on the underlying principles dealing with the nature of the integration of various disciplines, notions, skills and snags. However, the planning phase was marked by confusion, anxiety and rigidness of the higher authorities and the faculty. The participants in the current study had a perception that a higher level of integration was the best. This finding is consistent with literature.[9] The institutions have to consider their resources, facilities and culture in which they are planning to launch integrated curriculum, otherwise they may have to face operational failures. Faculty members also had a perception that the whole curriculum of their respective institution could not be at one particular level of Harden's ladder as they had thought during the planning phase. The process of integrating the medical curriculum is uneven and is not merely a categorised continuum of Harden's ladder.[7,9] Following the ladder is not like climbing up step by step, rather different phases of the curriculum might be at different steps of the ladder.[9] Just approximating the disciplines together justifies the lowest level of Harden's ladder.[16] It is not possible to achieve a uniform level of integration across the curriculum and integration levels may be different from module to module and even in the same module.[10]

Coordinated well-organised teamwork is necessary for the paradigm shift. The interdisciplinary faculty coordination, along with strong organisational support and infrastructure, are the prerequisites for educational reforms.[7] The foremost requirement is the formation and building up of a team whose members are well qualified and have the leadership skills to lead the organisation towards the desired change. An ineffective leadership and lack of collaboration by the faculty slows down curriculum dynamicity.[17]

Further research is recommended for the development of a tool that may identify the patterns of integration in different phases of the curriculum and may help the faculty in the process of curriculum planning and implementation.

Conclusion

"Curriculum integration is an inherently inconsistent process that does not follow the simple hierarchical continuum of integration. Specifying one level of integration in the whole curriculum is not justified. Planning and implementing an integrated curriculum are dependent on multiple interacting elements and needs a holistic approach to reach depths of its intricate nature. Achieving integration is an uphill task that needs a lot of dedication and teamwork. The institutes have to go through intensive faculty development programmes,, vigorous administrative management and working with stakeholders to accomplish the target of achieving integration."

Disclaimer: The text is based on an academic thesis, and the study was presented at the International Conference

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