

## How To Spice Up The Curriculum?

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**M**edical education has witnessed tremendous development in the last three decades. The traditional lecture based didactic teaching is gradually replaced with small group teaching; problem-based learning; learning with standardized patients and community-oriented medical education. Traditional methods of teaching and learning are no longer considered the most appropriate approach and new methods of teaching and learning are based on strong foundation of educational theories. Students are the focus point while designing medical curriculum and teaching and learning should be student centered. The traditional approach of sorting curriculum; based upon subject areas; is no longer considered appropriate and curriculum requires integration of various disciplines. Community needs are of utmost importance while designing curriculum. Students should be offered various electives so that the teaching and learning is individualized and fulfilling the community needs as well.

Traditionally medical education was based on apprenticeship model in which students were linked or attached with a particular doctor. Clinical problems which students would witness during their time in the hospital were not planned. But nowadays; there is a systematic approach and the whole learning and teaching process is appropriately planned with set goals and objectives in mind. This model of curriculum development is known as SPICES model which was proposed by Harden *et al* in 1984 [1]. SPICES is an acronym and stands for student centered; problem-based learning; integrated teaching; community-based; electives and systematic [1].

The major goal of medical curriculum is to produce competent doctors who can fulfill the society's needs. SPICES model should be applied at various stages of curriculum development so that the students are well-tailored with the society's health care need and are equipped with appropriate skills and clinical acumen. The various domains of SPICES model are compared with traditional teaching in figure 1.

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**Figure 1: SPICES model and traditional model of teaching (Adopted from Harden *et al*.1)**

	SPICES Model		Traditional Model
S	Student centered	T	Teacher centered
P	Problem-based learning	I	Information gathering
I	Integrated teaching	D	Discipline-based
C	Community-based	H	Hospital-based
E	Electives	S	Standard program
S	Systematic	A	Apprenticeship based

Other models for curriculum development have also been proposed such as PRISMS model but SPICES model is more commonly applied. Like SPICES, PRISMS is another acronym and stands for product focused or product related; relevant; inter professional; shorter or smaller; multi sites and symbiotic[2].

SPICES model provides an opportunity to the students so that they are involved at various stages of curriculum development starting from planning to implementation. But the process does not end here as medical education is constantly evolving and to make the curriculum innovative it should undergo vigorous process of evaluation and re-evaluation. Students should be made in charge of their own learning which is a major difference between pedagogical and andragogical learning.

The second domain of SPICES model is problem-based learning. The purpose of medical students is to equip students with the problem-solving skills and clinical judgment rather than loading them with information. Problem-based learning provides this skill. Students usually do not remember the knowledge and information learnt during basic science year by the time they reach clinical science under traditional method of teaching. PBL provides this cutting edge and the information learnt is long lasting.

The various subjects taught under traditional method of teaching are not an island but they are integrated with each other and there should be a perfect blend of various disciplines. Integration of these subjects is another major pillar of SPICES model. Students are provided with integrated information according to different organ-system so that they can correlate various aspects of information. The new curriculum at the University of Aberdeen and various other medical schools employ this organ-system approach.

Traditionally medical students are taught under



hospital setting in which there is minimum community exposure. SPICES model of curriculum development stresses the importance of community involvement. Students should visit general practitioner surgery (family practice clinic) and various health centers for this exposure and this should be a part of the curriculum.

Electives are key ingredient of SPICES model. Unlike the traditional approach in which all the students follow the standard program, electives are helpful to tailor the individual needs of the students. The final ingredient of SPICES model is the systematic approach. It is important that medical students should be exposed to important clinical cases during their education and training. Systematic approach provides this opportunity as the activities during clinic or hospital rotations are planned and students have to maintain a log book to make sure they have all the required exposure.

SPICES model has been successfully implemented globally by a number of different medical schools [3,4] and various medical schools are in the phase of adopting this model [5,6]. A number of medical schools are still using the traditional curriculum with teacher-centered approach [7-10]. Organizations such as General Medical Council (GMC) UK, World Federation for Medical Education (WFME) and Foundation for Advancement of International Medical Education and Research (FAIMER) have all stressed the importance of modifying the curriculum to fulfill the needs of future doctors [11-18].

Medical schools can evaluate their curriculum by using the SPICES model. This can be done by judging where their school is located on each individual domain of SPICES model. This strategy was used by Abdulrahman for evaluating medical schools in the Gulf region [4]. This strategy is very subjective and the same school may have different results if evaluated by different people. A better approach of scoring different domains of SPICES model was used by Van Den Berg [19].

To conclude SPICES model provide the right ingredients for medical education development. Medical schools employing this model can better equip their medical students to cater their patients' needs in future.

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