

Hybrid Semester System in MBBS Program - Ziauddin Medical College Experience

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Introduction

With the passage of time the demands of health care delivery system are changing. The rate of scientific discovery and accumulation of knowledge is gathering speed. In order to prepare medical students as tomorrow's leaders, an effort to improve the curriculum is unavoidable.

The traditional MBBS curriculum was based on passive learning styles and in Pakistan comprised of five years teaching program with student assessment carried out at the end of each year. In the first three years, as per the Flexner's recommendations the students went through the basic health sciences such as Biochemistry, Anatomy, Physiology, Behavioral sciences, Community Health Sciences, Forensic medicine, Pharmacology and Pathology while the last two years were dedicated entirely to teaching of clinical disciplines.¹¹

Internationally the bachelor of Medicine curriculum has been reviewed repeatedly, lots of research carried out in this field and many changes incorporated.) In Pakistan there was a dire need to review the curriculum and bring it up to the international standards. We needed a curriculum that is dynamic and is able to meet the needs of global health care and which is cognizant of the best practices in medical education. World over, most of the Higher education institutions are using Semester system of examination.

Since its inception, Ziauddin Medical College has introduced educational system consistent with the latest best practices. It has taken the initiative of improving quality of medical education by fostering adult learning styles and early introduction of clinical experiences.

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Rationale

Semester system provides an opportunity to students for continuous learning and assessment. With regular class schedules there is more focused interaction between students and teachers. Regular feedbacks help to clarify concepts as and when required. Twice a year examinations means that student progress is regularly evaluated, and is not judged only at the end of the year.

HEC proposed semester system for all programs in Higher Educational Institutions of Pakistan in 2008.

PMDC through its letter dated 13th Jan. 2009 allowed the use of semester or modular systems to a few select medical colleges.

Strategy

In the year 2009, according to the directive of Pakistan Medical and Dental Council, introduction of Semester system in the MBBS program was accepted as a challenge. This move for change is based on the assertion that in semester system the pace of teaching / learning keeps the teachers as well as students on their toes, teaching /learning goals are short termed, hence are easily achievable and the students get feedback more often since examinations are held within four to five months and the curriculum load is also manageable.² Medical schools in United Arab Emirates have also found semester system useful for their students.³

Abrupt replacement of annual examination system by Semester system could have been catastrophic for the students so it was decided to proceed gradually in a phase wise manner. To start with, semester system was implemented for the first, second and third year of the MBBS program. Conversion of the clinical years to semesters is still underway and year four and five will soon be following the same course.

Currently, the academic calendar for the first three years of MBBS program is divided into two semesters, followed by examinations. Internationally each semester is of 16 to 20 weeks duration but we found it difficult to accommodate the curriculum in 20 weeks semesters so

at Ziauddin Medical College each semester is of 22 to 24 weeks duration.³ 80% attendance and a score of more than 45% in continuous assessment is the eligibility requirement for sitting in a semester exam. Students progress is gauged in each semester by continuous assessment (end of module tests) and summative assessment i.e. Semester exam.

At the end of each academic year that contains two semesters there is a re-sit examination for each semester of the year. On the whole, in any given year, a student is given two chances to clear all the subjects i.e. regular semester exam and re-sit exams.

Promotion to next academic year depends on passing all the subjects of both the semesters. Students failing in re-sit exam have to repeat the year. Repeaters follow the same eligibility criteria for appearing in exams as is for the regular students for that year. Modules are integrated so if a student fails in one or more subjects in either semester, he/she has to appear in re-sit exam for all the subjects at the end of the year.

An important feature of semester system at ZMC is integration of all the disciplines included in the MBBS curriculum provided by PMDC. The curriculum at ZMC is designed to be spirally integrated. A move towards integrated learning is meant to prepare the graduates to develop a holistic approach to health problems. Integration of disciplines is not a simple task. It requires concerted effort by subject experts from each discipline. Hence an en block integration was not attempted rather it was planned to be implemented in three phases. In the first phase, horizontal integration of all the basic science disciplines to be taught in a year was carried out. In the second phase, integration was done across the first three years so that all the basic science disciplines of MBBS program are now taught in an integrated manner. As a result Basic Science disciplines i.e. Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, and Community Health Sciences are integrated horizontally to develop System based integrated modules.⁴ Number of modules in a semester varies from three to five.

With the new scheme, all the Basic Sciences are covered in the first three years while rest of the time is completely dedicated to Clinical Sciences. A horizontally running module for the clinical years consisting of important basic sciences topics, themed "Back to Basics"⁵ will be an integral part of learning in the clinical sciences.

In the third phase Semester system will be applied to fourth and fifth year covering all the Clinical disciplines.

In addition to the horizontally integrated modules certain themes that deal with generic competencies important for a medical graduate have been identified and included as longitudinally running modules throughout the entire curriculum. These are Behavioral Sciences, Medical Ethics, Communication Skills and Clinical Skills.⁶

ZMC does not solely rely on the traditional learning settings and teaching methods. It makes use of the student centered teaching/ learning strategies and incorporates instructional tools that help to achieve the objectives of an integrated curriculum. Hence, Problem based Learning sessions⁷, learning in primary care settings, case based learning and small group discussions are prominent features of the semester system. Undergraduate students are encouraged to do research projects relevant to national and community needs.

Student's achievement of learning objectives is enhanced by providing enabling environment through allocation of protected self study hours in time tables. Clinical Skills lab has been established at the campus where students regularly practice clinical skills on mannequins before performing them on real patients. Learning resource centre is well equipped to encourage computer assisted learning in the students.

Assessment tools being employed are also aligned to the curricular objectives of integration. One best type of Multiple Choice Questions and Short essay questions increase the objectivity of the exams while Structured Practical Exams and Structured Viva⁸ are used to evaluate the achievement of integrated knowledge. Table of specification is prepared for each semester exam which allows for proper weightage to be given to each topic in the exams.

In order to adapt semester system to its core, examination results are declared as alphabetical grades that replace the previous practice of declaring a student as satisfactory or unsatisfactory.

Program evaluation has been incorporated into the curriculum and is regularly conducted by the help of various survey forms that include Student course evaluation form, student teacher evaluation form, Course Review report by the teachers, Graduating students survey, Alumni survey and Employer survey.

Process of Curriculum Remodeling

Conversion of curriculum from annual to semester system has provided the opportunity to comprehensively review, redesign and remodel its curriculum necessary to deliver breadth of information and depth of insight in order to meet the requirements of the PMDC guidelines. Determined to implement semester system throughout the five year program and to bring about full spiral integration, the administration of Ziauddin Medical College aspired to gain support from all its stakeholders. Faculty and student buy in was achieved by the formation of a curriculum committee which meets regularly on a monthly basis and discusses all plans, processes and problems being faced by them. Student representatives are regular members of this body and their contribution is highly appreciated.

Teaching and learning strategies and plan of teaching for the upcoming modules are reviewed and discussed

in depth in medical education meetings held every week. All the faculty members are expected to attend this meeting.

Students being an integral part of the whole system of education are introduced to the new system of teaching and examination through prospectus and student guide books. Other tools used to create awareness about the system include lectures in large class format and small group discussions by the subject specialists during the Introductory Module organized for the first year students each year. A mock examination is also carried out in the first module to acquaint the students with the newer techniques of assessment being employed at the college.

The concept of Integration in Medical sciences is strengthened by other co curricular activities such as the monthly guest lectures delivered by experts from various health related fields.

Ziauddin Medical College has been a part of a group of medical colleges of Karachi that are working together to improve the quality of medical education in Pakistan. Dean ZMC, Controller Examination and senior faculty of ZMC have visited Dow University and discussed the problems faced during the process of implementing semester system and tried to reach to a solution jointly.

Our Experience

Change is always easier said than done. At ZMC, enthusiasm and commitment to improve the quality of medical education trickles down from the hierarchy to the faculty. Ziauddin Medical College has always been a strong advocate for improving the quality of medical education in Pakistan. It was the first institution in Pakistan to introduce Problem based Learning in MBBS program.⁹

Curriculum being a dynamic entity is regularly reviewed at ZMC more so after the introduction of semester system. It has proved to be a very demanding effort. Faculty members at ZMC always have their hands full with one or another task. The pace of teaching / learning required for semester system keeps the teachers as well as students on their toes.

Student feedback of the change to semester system has been encouraging as they are enjoying their studies more. They feel it keeps them busy all year round with a uniform level of burden instead of the piling up of work towards the end of the year. They find it easier to manage the curriculum load and believe that the grading system has improved competition among them and their results are testimony of the difference.

Faculty acknowledges that content load for exams has lessened on the students and assessment results have improved.

Recommendations

A uniform credit transfer policy at national level is crucial as transfer of students from one institution to another, nationally as well as internationally, will be difficult unless all the medical institutions of Pakistan are following the same credit transfer policy.

In order to enable the graduates to enter international postgraduate programs, medical colleges in Pakistan should strive to declare the final results in terms of Grade point average and Cumulative Grade point average

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