

Review Article

Curriculum Change in Kuwait: Some Insights into the Goals, Process and Progress

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BACKGROUND

The responsibility that medical schools bear for training the next generation of doctors is great. Two men are usually ascribed the greatest influence on this process, Abraham Flexner and William Osler. The former was instrumental in creating a scientific basis for medical education and the latter for cementing a relationship between medical practice and educational institutions. This could be thought of as the two halves of the traditional medical curriculum. Although their time of greatest influence was early in the last century the impact of their thinking lives on today. Little changed within medical education for almost one hundred years until there began a debate that challenged the process being used to create doctors best suited for serving society. In this sense, although led from the Western industrialized world, it has slowly become a global phenomenon.

The first change was a break from the traditional discipline based and departmental driven curriculum to systems based teaching, later to become fully integrated with the introduction of clinical science and early clinical exposure. Many medical schools still retain this strategy. But in the late 1960s Howard S Barrows introduced problem based learning (PBL) at McMaster in Canada^[1]. At last the yoke of teacher centered learning had been broken, although medical schools did not exactly clamour to embrace the strategy in their own schools. It was much later that adaptations of this strategy began to appear with a plethora of names. Accordingly, a hierarchy of strategies employed with the PBL model has been proposed from its application in a pure form, the original McMaster model, where PBL is central to whole process for study, to what seems most popular today which uses PBL as a complementary strategy, in what are called hybrid curricula

Alongside the developments within medical schools there came quite major changes in education. Learning objectives, for instance, were grounded in educational theory during the 1950s and 60s and would give direction to students and teachers alike^[2]. But what might have seemed like sound practice was soon to run into controversy due to the over specification of the principles^[3]. The introduction of outcome based educational principles have polarized some as well^[4,5]. The reason that outcome based education is favoured by the custodians of professional practice is because of the potentially greater accountability inherent in the process of producing graduates who best suit the needs of the society they will serve^[6,7]. This sounds reasonable. After all who would buy an expensive car without first knowing what they will get for their money?

Through the 1970s and 80s the drivers of change were largely internal and localized until the document issued by the General Medical Council in the UK took the initiative^[6]. This was both a stick and carrot for the medical schools in Great Britain because the GMC is the accreditation body. No longer could anyone sit on the sidelines. At the same time as major changes began away from the traditional curricula to more innovative curricula, there was serious consideration given to a core curriculum to solve the problem of content overload so long part of traditional curricula^[7]. Other important issues were now given priority, such as a greater community emphasis and identifying core clinical competences, skills and procedures, communication skills, ethical and medico-legal practice and a personal responsibility towards continuing medical education^[8].

So through the 1990s those schools who had invested in change and successfully introduced modern curricula were publishing their

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experiences^[9-11]. Some important lessons soon became apparent: the competing commitments on faculty staff, lack of evidence supporting the need for change; and when these had been addressed, clearly articulating the chosen change^[12]. David Prideaux, long known for his common sense and sanguine argument, even wrote an editorial about how to convey a school's experience of change for wider readership^[13]. By this time several schools who had successfully introduced their version of a modern curriculum were advising others and offering invaluable insights.

However, there still remained the detractors^[14], as would be expected. But it is important to hear the question they ask: what evidence is there that these changes produce better doctors? The problem is how to measure whether one generation of doctors is better than the next, with examination performance^[15], or perhaps more important feedback from the students themselves and newly graduated doctors from the innovative curricula^[16-18].

Mindful of the foregoing, the academic leadership at the Faculty of Medicine, Kuwait University, took two important steps: in the absence of an international accreditation body they commissioned an informal accreditation process by a highly respected body to determine any shortcomings of the school and its curriculum. Secondly, two institutions of excellence in medical education were asked to assist in the preparation and process, University of Dundee^[10], UK and University of Sydney^[19], Australia. Principles for change were worked out according to the SPICES model^[20]. The infrastructure was established to develop the new curriculum with wide representation from the teaching staff. A program of faculty development was initiated and open debate encouraged. Also, in 2006, a Center of Medical of Education was re-established. The new curriculum enrolled its first students for the academic year 2005 - 06.

The New Curriculum in Kuwait

The curriculum chosen is a case-based PBL hybrid model. The program model is an outcome based education one, articulated through four major themes: Integrated Basic and Clinical Sciences (BCS), Clinical Competence, Professional Development and Behaviour and Public Health. There are core and options study opportunities. The planned learning opportunities are linked by objectives that relate to the Outcome under the four themes. Early clinical exposure is led by a Clinical Skills Program supported by hospital and community visits. The program to be effective is logically structured around an incremental scale of developing generic skills^[21].

There is a major shift away from teacher centered learning through didactic lecturing to small group learning, supported by the PBL process and interactive tutorial sessions. The sandwich in the curriculum is a horizontally and vertically integrated organ-system based course of study. This part of the program will initially be supported by the use of study guides^[22]. Later, these are hoped to be replaced by an electronic curriculum.

The assessment process has been revised, new examination formats introduced and a strategy of both formative and summative assessments with in-course and end-course assessments has been evolved. All the assessments are aligned with the curriculum through the learning objectives. Because of the importance attached to assessment, a continuous program of faculty development is running to equip teaching staff with the necessary skills. The Faculty has successfully applied for membership in the IDEAL Consortium^[23], which will provide invaluable resources for assessment. Throughout, a process of program evaluation has been introduced to monitor the implementation of the new curriculum. This is just one important component that will contribute to the quality assurance of the Faculty's endeavours.

The new curriculum is a seven year program divided into three phases: Phase I, three semesters; Phase II, five semesters and Phase III, six semesters. Included in Phase I are the two semesters of university study, similar to the pre-professional program of the old curriculum. The third semester is for the preparation of Phase II studies.

Included in Phase II are the following:

1. Foundation Block (4 weeks)
2. Cardiovascular Module (9 weeks)
3. Respiratory Module (9 weeks)
4. Endocrine Module (9 weeks)
5. Musculoskeletal Module (9 weeks)
6. Neurological Sciences Module (9 weeks)
7. Digestive System Module (9 weeks)
8. Renal Module (9 weeks)
9. Blood and Lymph Module (7 weeks)
10. Integumentary Special System Module (4 weeks)
11. Consolidation Module (4 weeks)
12. Two Electives (4 weeks each)

Students will receive a bachelor of medical science degree by the completion (B.Med.Sc) of the Phase II course, irrespective of whether or not they are admitted to the final phase of the program.

Phase III is under construction and will hope to introduce its own set of innovations to support the main pillars of the curriculum and themes.

DISCUSSION

How can the curriculum change in Kuwait be justified some may ask. When two such influential bodies as the GMC in the UK and the American AAMC lead the way to change there is good reason to listen^[8,24]. For the American schools it is not the first time such a reform movement has gripped them^[25]. One major driver of these reforms is the change in medical practice and the expectations put on doctors as a consequence^[26]. But it is not just the curriculum that should be reviewed and also made fit for purpose; the assessments often are in need of a greater overhaul^[27]. Another consideration becoming increasingly important is the declining clinical contact that students have with patients as a result of changing attitudes among the public and reforms in health care^[28]. However, when the impact of this was tested a surprising result was found proving that success in the graduating examinations was not related the extent of a student's clinical experience or lack of it, rather the use of deep learning styles often developed years before^[29].

Surely much of this seems familiar and if that is so the question remains what sort of curriculum should be adopted. The Faculty of Medicine in Kuwait have chosen the hybrid model taking the best of the adaptations for PBL^[19], reduced the content overload and introduced many more interactive small group learning opportunities. Importantly more time is given for independent study.

Prejudging the outcome for graduates from a new curriculum may seem a bit like the lottery, but there is information that may be helpful. The University of New Mexico has been a popular source of data when comparisons between the performance of graduates from a conventional and PBL curriculum are being reviewed^[30]. While conventional teaching favoured students in the basic medical science NBME I examinations, PBL better prepared graduates who then completed specialist training and passed the NBME III examinations. These results can be compared with a much earlier report from Michigan State University College where 908 hours of didactic lectures as preparation were compared with 112 hours given in a problem based curriculum^[31]. There was no difference in scores or pass rates in NBME I. This is supported by a report from the same period showing that a program in medical sciences using independent study prepared students equally well as a conventional lecture based program for the NBME I examination^[32]. Using both the USMLE Step 1 and 2 and comparing students from a problem based and traditional lecture based curricula showed no differences over a seven year period, the authors concluded that their results would be reassuring for curricula planners^[33].

Interestingly, not only are regular students catered for by a modern curriculum but the high flyers appear to thrive on its opportunities. Another report from a US school with a conventional and PBL track confirmed once again no difference in results between students from both tracks in USMLE Step 1 and Step 2. However, there were clear performance differences favouring the PBL strategy for study in clinical performance, knowledge and clinical reasoning as well as non-cognitive behaviours. In addition PBL students were awarded more honours^[34]. Geography notwithstanding, curriculum change also offers a chance for renewal with a positive balance on educational impact and outcome^[35].

Two further influential papers could not report any consistent differences in knowledge base of graduates from PBL schools compared with those from traditional schools^[36,37]. However, like many reports in medical education the issues and the way they were presented were all a matter of opinion^[38].

Results in examinations are quite one thing, what graduates do in practice may be another. From Manchester University in the UK come two helpful reports^[39,40]. The first developed a questionnaire to survey medical graduates' own perceptions about their preparedness from a traditional curriculum for their first PRHO posting. The results helped modify some components in the radically new curriculum introduced in 1994, thereby qualifying their first graduates in 1999. The second report presents one set of data from the last graduates of the old curriculum and the first from the new^[40]. The graduates from the new curriculum "rated their course significantly more effective in 12/19 broad competences and 8/13 specific skills" compared with the graduates' rating from the old curriculum. In one area only did the "new" graduates rate their preparedness lower than the "traditional graduates" in "understanding disease processes". However, the clinical supervisors found no difference. It could be argued that if the results had been reversed there would have been a serious cause for concern, or indeed if the "new" graduates had come from elsewhere and the "old" graduates were still being graduated in Manchester, the need for curricular reform at Manchester would have to have been seriously considered as a necessary remedy.

However well-grounded the argument is for curriculum change there will always need to be safety checks built into the process. Both the ongoing course evaluation program and the in-course assessments should give early feedback on the students' progress through Phase II. The best Kuwaiti students, usually admitted to the medical program, are no less able than their counterparts elsewhere in the world. It is true that their motivation

may be different, but we believe that this has much to do with the failings of the traditional curriculum that is being replaced.

We also believe that the students still in the old curriculum will need special support and encouragement, but there is still time to introduce some of the planned Phase III innovations for those students who entered their clinical studies in 2007-08 academic year.

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