

Critical Review of the Book *The Integrated Medical Curriculum* by Raja C Bandaranayake and Strategies to Implement Integrated Medical Curriculum

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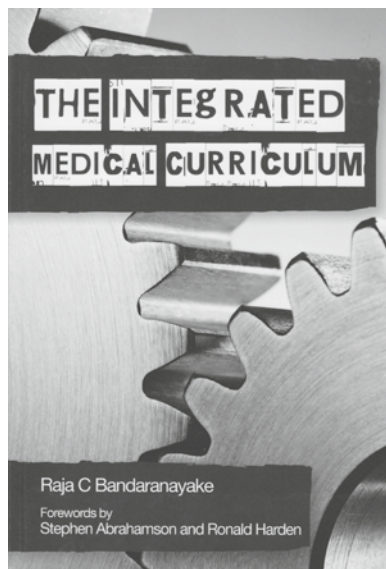
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The Integrated Medical Curriculum is a book written by educationist Raja C Bandaranayake and published by Redcliffe Publishing Ltd in 2011 in London. In its nine chapters and 124 pages the author describes how to evaluate the integrated medical curriculum.

In the first chapter “Integration and the medical curriculum” the author describes the terms. Term ‘integration’ is defined as ‘brought together into a whole’ and it is illustrated through examples from mathematics, history of medicine, family, and education. Integration is not summation, but rather harmonization of already existing parts, into a meaningful composite (pre-experienced in the past). Integration has different approaches, from spiral shape to integrated curricula, where the content is presented in a more meaningful way to improve its relevance to the student. The author explained the process of applied integration and the roles of the teacher as a facilitator and the learner as a person in whose mind the integration is taking place. In general sense, education is preparation for life.

The second chapter presents the history of the integrated medical curriculum and the story of how medicine was taught, from the time of Hippocrates and his disciples until today. In the beginning, with limited medical and other knowledge, it was easy to become a polymath, who, more or less, existed until industrial times and the rapid development of technical skills. The exponential growth of knowledge led to the development of different specialties, and from 1965 to numerous subspecialties. Consequently, medical schools developed conglomerate of



complex departments, which led to the so called centrifugal curriculum, which in turn pulled students in all directions. At the same time the lack of pedagogical skills was noticed among medical teachers who weren't prepared to undertake the task of education. Very soon the disadvantage of the centrifugal curriculum appeared through dearth of generalists in the USA as significant slice of that centrifugal curriculum was designated elective. After Flexner Report the main changes happened with the development of centripetal curriculum, which engaged reflective thinking, self-directed learning, problem solving and integrating as the foundation of integrated medical curriculum. The author explains a common misconception that remains even to date – if somebody is an excellent practitioner, he must be a good medical teacher.

The last subtitle of the second chapter, “Integration of humanities with medicine,” is very interesting.

It brings a meaningful explication on how doctor–patient relationship was being eroded with lack of communication abilities, which had never been taught to medical students. The importance of having the patient and not the disease as the focus of clinical practice and curriculum is clearly stated and valued. The differences in focus are due to imbalance between the disease-oriented and patient-oriented curriculum. Two different approaches are currently used for solving this problem: clinical psychologist and role-model of clinical teacher. The book is worth reading and very remarkable if only for this one paragraph. The author's view of medicine as a union of science and the art of medicine is impressive and should be widely spread among medical practitioners and students.

In the third chapter the levels and types of integration in medical curriculum and the main characteristics of integration are explained. These characteristics are correlation of components, appropriate sequencing of content, synchronization (team-teaching or “block system”) and early exposure to the patient. At the same time, all advantages are potential threats to integration if not properly applied. The change from discipline-oriented or classic curriculum to an integrated one can be facilitated through the “ladder of integration,” step-by-step instructions in 11 stages to reach the highest level, which is a real-life trans-disciplinary situation. The integration can be horizontal (themes at the same level) or vertical (different levels). Vertical integration is very rare in practice, due to organization of healthcare itself. Organizing themes within integrated curriculum

is still a demanding task for medical schools and is usually solved in one of three approaches: “organ-system,” chronological or “multi-system unit.”

In the fourth chapter integrative practices in medical curriculum and many different experiences in integration are summarized. Component-focused integration as its goal has the preparation of the basic doctor after graduation if he wants to undertake further education in some field of specialization. Horizontal integration can be applied on preclinical and clinical levels and even the author himself had a horizontal integration project in 1974. Vertical integration seems to be a supreme way of integration, where student can see the application and usefulness of knowledge, while horizontal one gives better idea of wholeness. Problem-based integration is another approach described in this chapter and it started almost simultaneously in Canada, the Netherlands and Australia in 1970/71, and its main characteristic is that students are placed in similar environment they will face later in professional life – the world of problems. Community-based integration is a learning process outside the hospital or clinic, and it has many advantages for rural areas and distant places, as well as for students who will later be in charge of these communities’ health. The Philippines’ experience is presented as lasting multiprofessional integration where the nucleus of health service is team work. Integration can be applied in many different ways. The best integration should envelop science and the art of medicine, with communication skills and medical ethics, with the aim of developing knowledge-based critical thinking and interprofessional collaboration, as well as emphasizing team work in health professions.

Reading this chapter demands a great deal of attention and concentration. Whatever the integration process is applied, it seems to be better than without any integration at all. We can find the statement that after graduation the basic doctor should be able to upgrade and specialize in any branch of medicine. This in turn means that they are not supposed to

be specialists when they become doctors. In many medical schools the professors are only aware of their own subject, without a holistic approach to education, which is a very common mistake. The author illustrated the advantages and even his own experience in the application of horizontal integration, but also touched on the core of difficulties by explaining the lack of logistic support and understanding of clinicians to join the team-teaching activity. The idea of vertical integration is surely more useful for students, but at the same time needs more team work than horizontal integration. From reading the author’s opinion it can be concluded that a clinician is better than a basic scientist at impressing students and becoming their role model, a leader.

In the fifth chapter advantages and disadvantages of curriculum for both teachers and students are explained. The main advantages for students is the improvement of retention – they recall better and exhibit deeper learning. There is no duplication of knowledge, no redundancy; they can transfer learning, the knowledge from different subjects. The benefits are achieved only if students take part in the process and undertake integrative learning to link the knowledge for themselves. The main advantages for the teachers are self-development, and development of mutual respect for colleagues and other disciplines, as well as cooperation. Disadvantages are very few and all are consequences of poor application or misunderstanding of the concept of integration. The main disadvantage is the cost of integration in faculty time. For students it is increased anxiety at the beginning of medical school. Also, they can rarely venture deep into a specific discipline of interest.

This chapter is the crucial one. The question whether integration is a worthwhile or wasted investment finally found the answer. In brief, it is good if teachers are well prepared and if students are ready to integrate for themselves. The author however didn’t forget to speak about the particular advantages and drawbacks for both students and teachers. It seems that the success of integration

depends on both parts equally. The main difficulty in implementation and success of integration comes from teachers and their willingness to spend more time in preparation, in discussion with colleagues and in readiness to change the basic approach to the problem. Students will study in whichever way, but after initial trepidation, they will get used to integration. The author also discussed a very important remark that we can still hear very often – “with integration, students have no time to go deeper into any particular field.” One of the major difficulties is also defined in this chapter – it is student assessment which needs to be integrated as well. Without integrated assessment the process is not complete, and it is the responsibility of teachers alone.

In the sixth chapter the integrated student assessment is explained. Integrated curriculum needs integrated assessment. Usually, multiple choice questions are not integrated as it is difficult to make them this way, however it is possible, and this is illustrated with the example of Arabian Gulf University, which had organ-system based curriculum and integrated examination system. Free-response questions seem to be the best way of assessment to support integration. Clinical examination in the form of OSCE (objective structured clinical examination) and OSPE (objective structured practical examination) can be set in an integrated way especially if examiners use the long-lasting cases, which allow better testing of students’ knowledge and understanding. The problem with integrated exams is of administrative nature, since regulatory and licensing bodies still prefer discipline to overall scores.

The author considers the possibility of testing higher cognitive abilities. These abilities are necessary for the art of being a good doctor. Unfortunately, most of medical schools have a simpler goal – to make a doctor. For many years the universal rule has been the following: the medicine has nothing to do with how smart you are, but how much time you spend learning... It’s a sad reality, but with the new approach, hopefully we will

have smart doctors with applicable knowledge, instead of doctors with only brilliant marks.

In the seventh chapter the evaluation of integrated programs is discussed as very important feedback and guideline for improvement. The most suitable model of evaluation is to evaluate each of the elements of integration separately: INPUT (physical components of curriculum-actors), PROCESS (what actors do) and PRODUCTS (the outcomes and results of their doings), all under one hat of CONTEXT (traditional approach and requirement of higher education and accreditation). The use of this evaluation is to find the weak points and to improve them. The evaluation can be undertaken by internal or external evaluators, which have to be completely familiarized with all elements of curriculum.

Also, as the author says, everything happens within CONTEXT: tradition and requirements by higher authorities and accreditation bodies. The context is changeable – very inert,

but people make the context. The requirements, rules and regulation for licensing, may be less inert in comparison to tradition. But probably the best way would be self-evaluation, when schools replace the traditional curriculum with integrated. Further implementation of any process needs time and adjustment – it is not enough to have a good plan, the basic key to success is how the plan is applied. The author has pointed out that the program evaluation must be planned before its implementation. This is a very important point of view, and it may improve the implementation itself when we know in advance what measurable components of the program are.

In the eighth chapter the most important implementation guideline keywords are provided. The first and the most important problem in the implementation is resistance and traditionalism of faculty. But this seems to be inevitable, as every innovation had to travel a difficult road until acceptance, according to known history.

However, the guidelines are clearly enumerated: understanding of the concept is first, and acceptance of philosophy of integration, which indeed seems to be more important, is second. In this manner the ultimate representation of integration can be shown, especially to a resistant faculty.

In the ninth chapter there are examples: four different case reports of implementation given by order of success in the integration process. Schools A and B were unsuccessful and C and D successful. School A had tried with just one topic; school B one organ system; in school C the integration was complete but obstructed by an old-fashioned faculty; in school D the integration was successful as faculty members were fully committed. Tradition is the main factor of obstruction, and it always comes from faculty's side.

Overall, the book explains the process of integration with useful tips and offers experience necessary for its implementation. Highly recommended!

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