Problem Based Learning, curriculum development and change process at Faculty of Medicine, Makerere University, Uganda

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Abstract:

Introduction: The faculty of Medicine, (FOM) Makerere University Kampala was started in 1924 and has been running a traditional curriculum for 79 years. A few years back it embarked on changing its curriculum from traditional to Problem Based Learning (PBL) and Community Based Education and Service (COBES) as well as early clinical exposure. This curriculum has been implemented since the academic year 2003/2004. The study was done to describe the steps taken to change and implement the curriculum at the Faculty of Medicine, Makerere University Kampala.

Objective: To describe the steps taken to change and implement the new curriculum at the Faculty of Medicine.

Methods: The stages taken during the process were described and analysed.

Results: The following stages were recognized characterization of Uganda's health status, analysis of government policy, analysis of old curriculum, needs assessment, adoption of new model (SPICES), workshop / retreats for faculty sensitization, incremental development of programs by faculty,implementation of new curriculum.

Conclusion: The FOM has successfully embarked on curriculum change. This has not been without challenges. However, challenges have been taken on and handled as they arose and this has led to the implementation of new curriculum. Problem based learning can be adopted even in a low resourced country like Uganda.

Keywords: curriculum development, medical education, problem based learning, community based education and service.

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Introduction.

The Faculty of Medicine, Makerere University was established in 1924,and is the oldest Medical school in East Africa. It runs 5 undergraduate programs, namely Bachelor of Medicine and Surgery, Pharmacy, Nursing, Dentistry and Radiography. In 2001, the Faculty of Medicine reviewed its curriculum and decided to change it to Problem Based Learning (PBL) and Community Based Education and Service (COBES). The curriculum change was undertaken after a needs assessment. It was noted that Makerere was no longer the sole trainer of health professionals in Uganda. It now faces competition from other training institutions and so its graduates also faced competition. Despite having been in existence for 79 years the doctor to patient ratio was still very low and brain drain was on the increase. The resources and funding were contracting and yet the demand for the health professionals was increasing and the population was expanding rapidly. The faculty also realized that the number of staff at the faculty was reducing.

PBL has been reported to be a valuable learning method in which students first encounter a problem and this is followed by a student-centered inquiry. [1, 2, 3] Typically a group of 5-10 students work together in a group (tutorial), facilitated by one or more faculty members. Students are encouraged to explore what they know in order to understand the problem. Problems are created and selected by faculty to present priority health problems of the region. [4, 5] PBL encourages active student participation, and is student centered rather than teacher centered. It also encourages the student to develop into a problem solver and develop the ability to practice life long learning skills as well as be able to evaluate and retrieve information easily. [6] It is believed that early and sustained exposure to community and primary health care problems promotes participation in community health work. [5] The objective of the study was to describe the steps taken to change and implement the new curriculum at the Faculty of Medicine.

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Methods

The stages taken during the process were described and analysed. The approach was a participatory one where by the planning and implementation was done through a series of committee meetings, retreats and workshops. A working group was selected from faculty and given the task of steering the curriculum change process. The committee was heterogeneous; it included the Associate Dean Education, who is an anatomist, 2 surgeons, a dentist, a pediatrician and radiologist. From time to time the Committee would co-opt other faculty members for expert advice when necessary. The committee members did the background work such as organising of the stakeholders meeting, retreats and workshops. The stakeholders who included faculty members and non-members were encouraged to participate meaningfully.

Most workshops included introductory talks on intended topics of discussion followed by creation of small groups of 5-10 people who were then assigned different activities. At the end of the small group discussions, a plenary work session would be carried out where each group would present their contribution, which would be discussed. A secretary would capture all this.

All this was aimed at encouraging participation, capturing all ideas, utilization of experts and encouraging dialogue and creativity. This approach was modified from the participatory question based facilitation (PQBF) approach that was used by Maxplan, a group that planned to change the Faculty of Medicine and Institute of Public Health into a College of Health Sciences.[7]

Results

Characterisation of Uganda's health Status.

The first step recognized was that the committee analysed Uganda's health status and noted that Uganda is a small Land -Locked country in East Africa with a population of 25 million people. It is mainly an agricultural country. In the past 30 years. It has had a lot of political upheavals but is now relatively stable. Uganda's health status continues to be characterized by poor health indicators like an infant mortality rate of 88/1000, maternal mortality ratio of 560/100,000, under five stunting 46%, a fertility rate of 6.9 and poverty with a household income of I US dollar per day for 34% of the population. There is also poor access to health care. The doctor to population ratio is 1:28,000 with only 49% of the population living within 5 Kms of a health facility.

The health care needs of the country are changing with emergence of new diseases like HIV/AIDS, highland malaria and reemergence of infectious diseases like tuberculosis. There is an increase in diseases of life style, which weren't present before. There is also a rapid increase in demand for health care due to a 177% rise in population between 1971 and 2002.

There has been a change in the functions of government in the planning of health care services delivery to a decentralised system. Whereby the country is divided into districts and they take care of their populations rather than the central government. This has exposed weaknesses in the human resource availability. It has been noted that the health workers though well trained lack the vital human, social and management skills.

Analysis of old curriculum: The old curriculum was traditional in that it was teacher centered and mainly lecture based. It was mainly faculty and teaching hospital based and not adaptable to the changing health needs. Though it had a community component, this was limited.

Needs Assessment: This was carried out and showed that there was need to examine relevance of training, to take into consideration horizontal and vertical integration, to expand on community teaching and to adopt a student centred learning approach through Problem Based Learning and COBES. This also identified the competences that the stakeholders wanted their health professionals to have which includes problem solving, lifelong learning skills, leadership skills, communication and clinical skills as well as managerial and administration skills. They also wanted them to have research skills and work as a team.

SPICES: A new model SPICES was adopted, S – student centered P – Problem based, I – Integrated C-community oriented, E-Elective modules S- Systematic planning.

Sensitization: A working group to co-ordinate activities was formed. It was charged with the task of steering the curriculum review, planning of activities and implementation of the new curriculum.

The curriculum revision was done through consultation with faculty and stakeholders. The activities carried out included stakeholders meetings and workshops, sensitisation workshops, core curriculum committee working retreats and training of tutor's workshops. A total of 30 workshops were undertaken and a proposal of the new curriculum design and curriculum map was designed.

Mobilisation, sensitisation and training faculty members was carried out and organised by the curriculum committee. Sensitisation also included trips to schools that are using the PBL model of training like

Moi University Kenya, New Mexico USA, Maastricht in the Netherlands and Newcastle in Australia. Resource persons from the above universities were also invited to facilitate at some of the workshops.

Curricula of the 5 programmes namely Bachelor of Medicine and Surgery, Bachelor of Nursing, Dentistry, Radiography and Pharmacy were revised and approved by the Faculty Board, Makerere University Senate and Council.

Development and implementation of new curricula

An approach of incremental implementation of the programme has been developed. Workshops have been called involving the faculty members. These have addressed the following issues: sensitization as a continuous process, training of tutors, writing of problems, planning timetables on a day-to-day, hour-to-hour approach. Allocation of activities, space and identification of responsible staff members as well as working on an assessment plan were also addressed.

Challenges

The change has not been easy and several challenges have been faced. For example not all the teachers have welcomed the changes. A lot of fears have been expressed There is a fear that as experts their roles are not clear in the new curriculum. Some of the members have not yet clearly understood the new curriculum. Some have said that tutoring is not rewarding while it is time consuming. They have felt that too much emphasise has been put on self-directed learning overriding other learning methods like practicals. Some think that since planning and implementation are going on concurrently this delays the process. Some feel that the students are overloaded with work. There is fear that the new curriculum requires more human resource than the traditional curriculum. Some members of staff feel that the change was introduced hurriedly and had limited departmental involvement and that that is the reason some have found difficulty implementing it.

The students on the new curriculum have always indicated that they enjoy it but thy point out that planning and implementation should be done more carefully.

Discussion

A curriculum is a dynamic process that needs to be reviewed constantly. There has been a rapid expansion of knowledge and a lot of innovations in medical education. Many medical schools in the world are in the process of reviewing their curricula .[8] Bearing all this in mind the FOM realised the need to examine the curricula of all their programmes. During the needs assessment survey, stakeholders identified the competencies that they would like their health workers to have. The FOM realised that these could only be met by adjusting the curricula to ensure that the needs are met.

The FOM realized that it was no longer the sole trainer of health professionals as other medical schools had sprung up. Therefore the FOM had to have a critical examination of how it conducted business so that its graduates remain competitive on the job market. For a curriculum to be implemented effectively, this development had to be done collectively so that all stakeholders develop a sense of ownership of the curricula.

The FOM has a vision, "To be a centre for academic and health service excellency". This can only be achieved through having a dynamic and vibrant curriculum that involves the teachers and students, through the participatory approach a wide range of stakeholders have been involved successfully in the change process. This has led to appreciation of the advantages of change, enlisting of collective support, working as a team, seeking the collaborators and enlisting leadership at all levels. These have enhanced the capacity to manage change. The major changes that have come about through the review of the curriculum include, problem based learning, self-directed learning and early clinical exposure, COBES and systematic planning. The fact that all experts are responsible for determining the content and the best means of delivery of the content has greatly enhanced cooperation among faculty.

Government policy is key in shaping and determining the standards of medical education. Therefore the FOM has worked within the changing government policies to ensure that they have a positive impact on the quality of medical education. At the same time government has a lot of influence in the delivery of quality healthy care.

The FOM is committed to responding to the changing needs of the community by developing a curriculum that is needs driven and also by producing health professions that have appropriate competences. It also feels accountable to the community and that is why it involved them in the curricula development.

It is also committed to the needs of its students by enabling them to develop life long learning skills, making sure that they have the competencies that will enable them to survive in the competitive job market. The new methods offer an opportunity for the students

to be in charge of their learning. The students acquire the expertise in looking for their own learning resources and knowledge. They impart problem solving skills, critical thinking, communication skills, help integrate rather than compartmentalise knowledge. There is closer contact between teacher and student. Early clinical exposure helps students to learn in context and challenges different disciplines to rethink relevancy and context of what is taught. Community based education and service helps the students to appreciate the communities and the environment in which they will work. Interprofessional training encourages teamwork. They also optimise available resources and tap resources that were previously not utilised. All the above contribute to producing a relevant health professional and thus contribute to national development.

The FOM cannot survive without its staff that with the students make up the central hub on which its core activities depend. Therefore it has ensured that they are involved in the entire process and are the ones that are implementing the innovations.

The changes in the FOM are on going and challenging. However the faculty is beginning to see the changes make an impact on the availability and utilization of resources, which is very encouraging. Great efforts are being made to institionalise the process so that more and more people are involved by setting up committees, having sensitisation workshops. A quality assurance committee has been set up to take care of the quality issues.

The FOM has successfully embarked on Curriculum change. This has been achieved through a participatory approach where all stakeholders have been involved in the process.

References

1. Barrows HS. Tamblyn RM (1980) Problem Based Learning Applied to Medical Education. Revised Edition. Springfield Publishing, Illinois.
2. Neufield V, Pickering R, Simpson J. (1997) Priority Health problems in the Education of Health profession community-partnerships services, Network publications, Maastricht, The Netherlands.
3. Schmidt HG. (1993) Foundation of Problem – based learning: Some explanatory notes. Medical Education: 27:422-3.
4. Bordage G. (1987) The curriculum: Over loaded and too general? Medical Education 21: 183-8.
5. Neufield VR, Pickering R, Simpson J. (1997) Priority Health problems in the Education of Health professionals. (2) Network publications, Maastricht, the Netherlands.
6. Shin JH, Haynes R.B, Johnston M. (1993) The effect of problem based self-directed undergraduate education on life long learning. Canadian Medical Association Journal 48: 969-976.
7. Dodge CP, Sewankambo N, Kanyesigye E (2003): Participatory Planning for the transformation of the Faculty of Medicine into a College of Health Sciences. African Health Sciences 3(2) 94-101.
8. Gwendi Camp, Problem-Based learning (1996): A paradigm shift or a Passing Fad. Medical Education Online, 1:2:1-6.