

BOOK REVIEW

Problem Based Learning in Health Professions Education: Why and why not. Commentary on the Problem Formulation Chapter: Misconceptions leading to Malpractice

Wagdy Talaat, MD, PhD

**Professor & Founding Head, Faculty of Medicine, Suez Canal University, Egypt
Consultant & Author of Four Books for the Eastern Mediterranean Regional
Office of the World Health Organization (EMRO, WHO)**

**Fellow and Faculty, Foundation for Advancement of International Medical
Education and Research**

**Co-Director, the Joint Master of Health Professions Education between
Maastricht University & Suez Canal University**

**Corresponding Author: Wagdy Talaat. Department of Medical Education.
Faculty of Medicine. Suez Canal University. Egypt.**

Cell Phone: +2(0100)3487678.

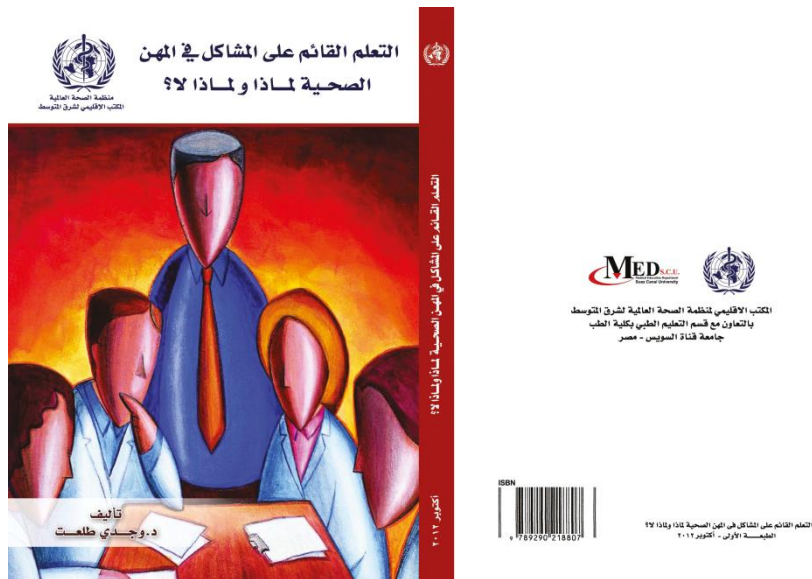
E-mails: watalaat@gmail.com – w.talaat@maastrichtuniversity.nl

Abstract

When Medical Education, as an academic specialty, was introduced to the Arab region at the beginning of the twenty first century, a need was developed by the Eastern Mediterranean Regional Office of the World Health Organization (EMRO, WHO) to establish a distance learning program in Arabic that provides learning opportunities in medical education to health professionals in education or training positions in Arab countries. The Arabic Diploma of Health Professions Education by distance learning was the fruit of collaboration between EMRO, WHO, and the Department of Medical Education at the Faculty of Medicine, Suez Canal University. Five books were authored and issued by EMRO in medical education in Arabic to be used as references for the fellows applying to this program. "Problem Based Learning in Health Professions: Why and why not"

(التعلم القائم على المشاكل في المهن الصحية لماذا ولماذا لا) ISBN: 9-789-29021-880-7 [1] was one of those 5 books. This book explained in a very simple way the concepts, rationale, and techniques of PBL as an educational strategy, and focused on the misconceptions and pitfalls that many face when they adopt and implement PBL. In the commentary on this book, I would like to further highlight such misconceptions and pitfalls in English.

Keywords: Problem Formulation- Problem Based Learning in Health Professions



Introduction

Probably those who attended the birth of Problem-Based Learning (PBL) in McMaster University in Canada in the sixties of twentieth Century did not anticipate the bright future for this unfamiliar baby or the continuous debate around its ability to survive within such traditional culture which usually resists and rejects any deviation from what's called "norm".

After two years of its birth, Maastricht University adopted that strange looking baby and made it their norm in the undergraduate study of their medical school.

Since then, lots of medical schools around the world, Suez Canal University in Egypt, Gezira in Sudan, Tikrit in Iraq, Hadramout in Yemen, Qassim in King Saudi Arabia are the most famous in the Eastern Mediterranean Region, have adopted such PBL strategy but with different implementation styles ranging from full PBL strategy to different degrees of "hybrid" PBL strategy.

The educational problem in PBL constitutes the corner stone of this whole strategy. The good problem formulation, along with the well trained faculty and students and well adapted resources and healthy educational environment that foster learning over teaching, constitutes the angles of success in PBL in health professions.

Selection and incorporation of selected problems within the curriculum have been two major factors to be researched and published by the NETWORK: Towards Unity for Health (previously called NETWORK of Community Oriented Institutions), and devoted Task Force Two to develop a scientific methodology to select and incorporate educational problems in PBL system in health professions education [2].

Formulating problems to be used as triggers in PBL tutorial classes is not an easy task. Working in this field for over 40 years, I have witnessed many misconceptions that eventually lead to malpractice in this field. Administrators, Planners, Problem designers, Tutors, and Students all take charge in such dilemma.

Misconceptions

Problem-based learning fosters learning over teaching

Problem-based learning is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material [3].

A common mistake is to call this strategy "Problem Based Teaching"! Everything in this strategy is based on student-centered active learning. Didactic teaching roles that are played in this strategy are very minimal and usually have

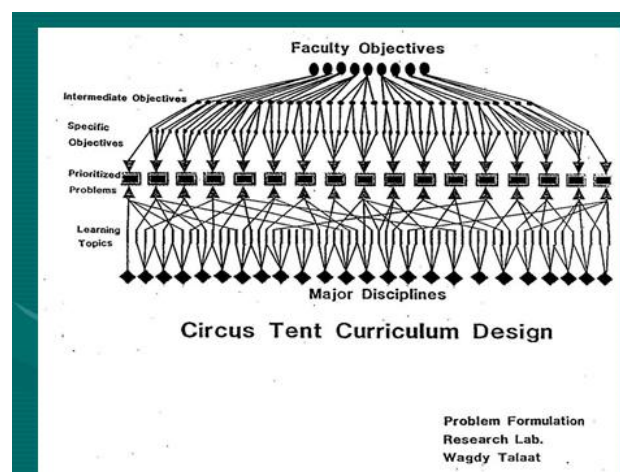
different roles. Take lectures as an example, they start late in the weekly activities after giving the students a full chance to actively learn on their own and take responsibility of their group and self-learning in a mentoring and relaxed environment. Students always take the driver's seat, but the tutor/facilitator/faculty is always in the back seat keeping a close eye and guide students to achieve their learning objectives.

So, learning is the key issue here and we should keep this in mind while designing our whole PBL curriculum.

PBL Curriculum

Speaking of curriculum, a frequently asked question: Do we have a special design for PBL curricula that differentiates this unique strategy from other more traditional strategies? The answer is a BIG YES. To begin with PBL strategy is one of the best examples of integrated curricula: horizontal, vertical, and even spiral. In case the curriculum is traditional, problem solving approach could be used as a skill to be taught sporadically to the students without adopting a full, integrated, PBL strategy. PBL curricula belong to that kind called "Objective Oriented Curricula" which always starts by "Essential National Health Needs and Priority Health Problems of the community".

The structure of PBL curriculum strategy is based around corner stone problems that are selected and prioritized according to a specific methodology; one is adopted by the Network: Towards Unity for Health (TUFH)[4]. Incorporation of such selected and prioritized health problems in the medical curricula is a huge task that needs a special care and huge coordination effort [2]. Educational problems, even if well designed, incorporated in wrong places in the medical curricula will lead definitely to failure in achieving the school and students' learning objectives. Sophisticated, more difficult, problems tackled by first phase students inhibit and obstruct the learning process. Too easy problems will not be identified by clerkship phase students as problems in the first place, a point that also touches the integrity of the spiral integration of the curriculum. This explains the careful handling of incorporation of educational problems in PBL curricula.



Problem Formulation

Problem formulation could be the most important and most tricky part of planning for PBL in health professions education. Only very well trained problem designers can efficiently do this job. Many would think that we mean the patient when we include the word "problem" in problem formulation, problem solving, or Problem Based Learning in general. In fact, and according to Howard Barrows definition of PBL as a difficulty that the student cannot solve by random actions [5], the student (not the patient or the community or the tutor of course) is meant by the word problem. Simply, we create a "problem" or challenge to the student(s) to solve! Without creating a real problem to the student(s), he (they) will find nothing to solve. Sometimes a health, not disease, issue is addressed in the problem like pregnancy, and in some other instances a very complicated patient problem is addressed that solve itself by itself without any effort by the student simply because the problem designer put too much information in the problem, solved the problem on the students' behalf, and left nothing for the students to solve!

During the PBL class tutorials, only students have the right to pose questions and discuss among themselves the possible answers and in case they could not find any, list these inquiries as learning objectives to search for its answers by self/group learning in between the brain-storming and the debriefing sessions. The library, the internet, the labs, seminars, and subject area experts would be the venues for exploring the answers for such inquiries. Based on that, direct questions should be avoided in the scenarios of educational problems and only left for the exams that match this type of education (PBL) which is called Modified Essay Questions (MEQs) where questions are listed under a stem made as a health problem and the questions are very specific to the case not to the general disease (e.g. questions are relevant to a specific diabetic patient according to his age, weight, type of diabetes, severity of disease, other confounding illnesses, general condition, and not direct questions on diabetes in general). If the questions could be answered in isolation from the specificity of the stem, then the whole MEQs is incorrect.

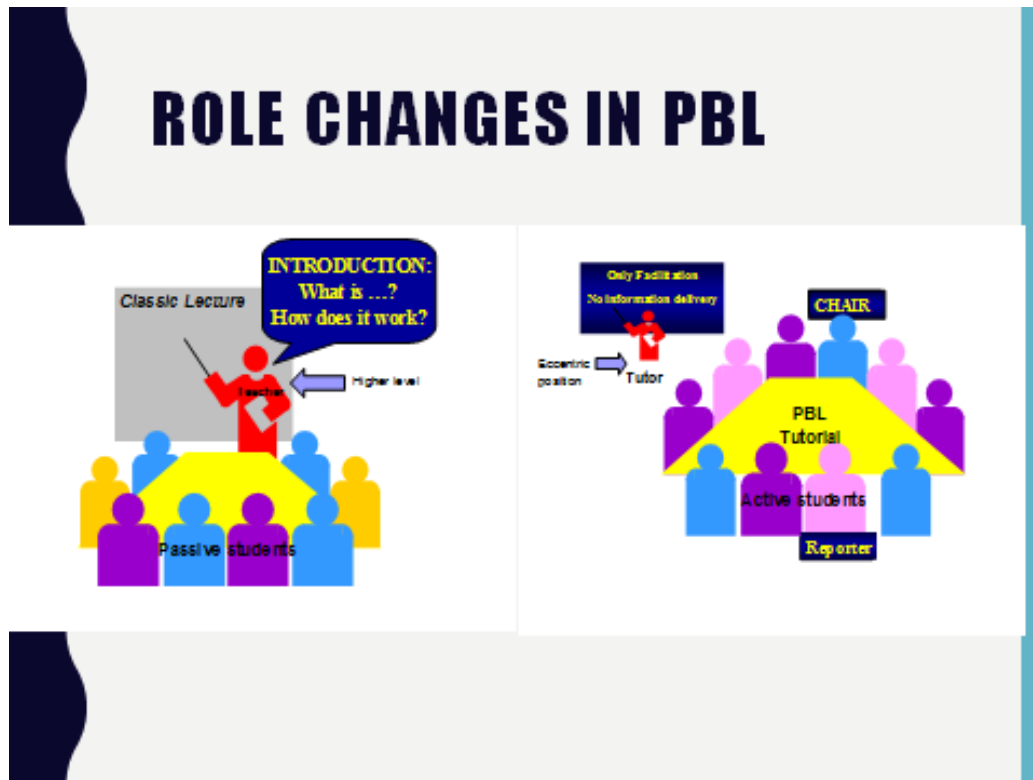
The whole scenario of the educational problem should be based around corner stones each address a specific pre-set objective. The list of pre-set objectives is prepared by the curriculum designers to address a specific part of the curriculum at this level. After using the problem as a trigger for the students to address such objectives, the students learning objectives (as an outcome of brain storming sessions) are matched with the faculty pre-set objectives to test the validity of the problem. To a large extent, this process helps planners to take the decision of using such problems in the future as such for the same batch, doing modifications before re-use, or to get rid of such problems and redesign new ones all over again. Using the problems by title by adding more events to the same scenario for the same batches during the same academic year or in higher level for spiral approach purposes is also ,sometimes, useful as long as the problem is tackled from a different aspect and or from deeper depth.

This is mostly what is related to the problem "design", but to diversify the "formats" for the students who might see it boring to work on "paper" formats all the time, even if this paper format takes the sequential form which is more interesting especially for addressing the "clinical reasoning skill", other formats like Card format (or P4 Deck), Video format, and Computer format should be also considered.

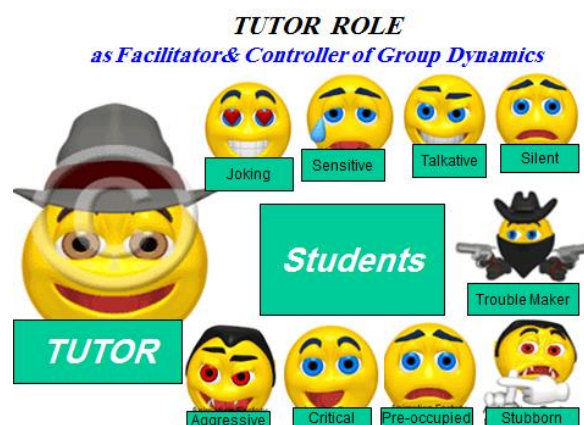
PBL Tutorials

Starting from choosing the right place for learning as fit for small group learning is a key issue in PBL. This might constitute a problem for those who want to

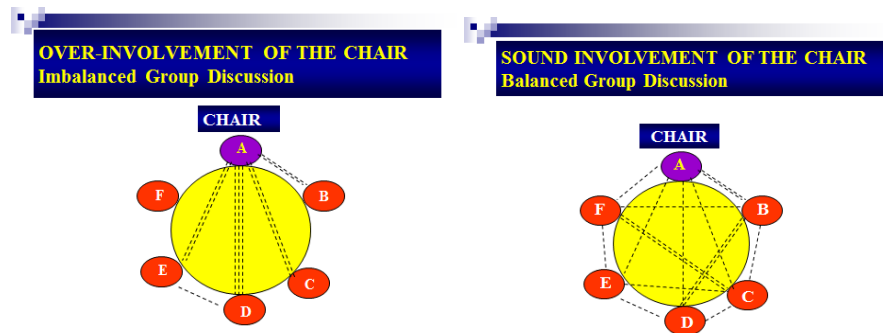
convert from adopting a traditional curriculum that is teacher-based, large group teaching/learning lecture halls- based schools to a PBL fully integrated strategy.



Group dynamics inside the PBL tutorial classes need special training to class tutors who act as facilitators rather than teachers when they deal with such dynamics.



The learning environment is another highly important aspect in PBL. Students should feel relaxed in a permissive atmosphere where learning should be more enjoyable and exciting. The tutors should encourage cross communication among all students' members of the class tutorial, and try to avoid central domination of the session moderator (or chair) even if that moderator is one of the students.



In PBL, training of class tutors is instrumental in making this strategy a true success. Badly trained tutors would constitute a true danger on the success and sustainability of the PBL strategy. of students under this educational strategy. Still, Modified Essay Questions (MEQs) as a written exam is the best to reflect all potentials of such strategy where we can assess all levels of the cognitive domain of the "Taxonomy of Educational Objectives". This is done through asking specific questions tailored around a specific health problem that targets a specific person, community, or environment. Such questions are very cautiously crafted in relevance to a stem (problem) and can never be answered without recalling prior knowledge, identifying and understanding the problem, applying prior knowledge, analysis, synthesis, evaluation and probably reaching creativity level during finding the right solution of such problem. For oral exams, the "Triple Jump" would be perfect to address a problem to the examinee and ask him or her to analyze it and formulate learning objectives, go, in the second jump, to collect information, then come back, in the third jump, for debriefing and solution of the problem. All other exam tools like MCQs, Portfolios, and others are also complementary to such two main forms of exam in PBL.

Program Evaluation

What's peculiar about program evaluation in PBL is regular evaluation of all components of this educational strategy. By the end of each class tutorial, the students self-assess themselves, their peers, and their tutor. The tutor assesses the students as part of the formative exam. The students and the tutor assess the efficiency of the weekly problem. The results of such process go to the program evaluation committee to analyze and to transform the data in to information. The matching of the faculty pre-set objectives of each weekly problem with the students' learning objectives also gives a clear idea about how valid such problem was in addressing the school specific objectives, and how reliable it was when we compare the students' learning objectives among all classes of the same batch. As "dynamic curriculum" that should address and reflect the current changes in the local, national, regional, and global health map. The PBL curriculum should be regularly evaluated for its updates in terms of the

selection of the problems as priority health problems, and perfect incorporation of such problems in the right places in the integrated curriculum.

Conclusion

PBL in good hands would lead to graduating physicians equipped with refined knowledge, skills, and attitude that make them lifelong learners, and highly skilled in dealing with the priority health problems of their community. Hybrid PBL means different things to different people. Misconceptions in PBL might lead to undesirable outcomes.

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