

# From teaching to self-training i.e. Problem Based Learning

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Invited commentary to the paper by Willem van Hoorn.

The increasing number of facts and data, progress in the medical sciences, the explosion of biological knowledge — these are the factors which are forcing changes in methods of learning. Master and pupil, groups of students and the model of medical education which divided learning between the basic and clinical sciences, didactic teaching — all these systems seem to be inefficient for today's medical education. The problem of an effective learning system is general for health care education, probably actually for all dimensions of education. Problem Based Learning (PBL), designed in McMaster University, introduced by Maastricht University and used in study programmes at the Faculty of Health Sciences at Linköping University, Glasgow University and other medical schools, gives the opportunity to study in a different manner.

PBL is a student-centred method of learning, which gives the students great freedom to plan and organise their own studies. The students are divided into small tutorial groups (7–8 students). Each tutorial group has one or two teachers (tutors, facilitators) to guide and facilitate the learning process. This is started off by a real-life scenario or problem ("paper-case", "professional patients" at the beginning of the study). The tutorial groups start their learning by using a formalised problem-solving process, thus finding out what their individual learning needs are in relation to the objectives. To meet these learning needs, the students are offered a range of learning resources, such as a very well-equipped library, access to data-bases and rooms for practical skills. A list of recommended literature is handed out to the students, but they are free to choose the books they prefer. Lectures, seminars, laboratory work, practical skills training and other learning methods are also used to address the students' learning needs. The examinations at the end of each semester are integrated and aim at assessing understanding of complex contexts rather than details.

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The principle of PBL, the theory behind the technique, is that people learn and remember information better if the learning material is placed in the context in which it is going to be used in the future. This forms also the basis for a lifelong learning and training process. This method of working means that the students use knowledge from different subject areas to understand and explain the problem which is being processed. This also helps to train and develop their ability to work in teams, to deal with knowledge, personal learning, problem solving and co-operation. Practical training is based on a real-life experience and is therefore likely to be remembered. Training in the tutorial group means self-training during work in a team.

Our traditional system of medical education needs a curriculum change but the transfer from the traditional curriculum to the PBL-based curriculum will meet with difficulties in all Polish and other medical schools. The longstanding problem associated with the medical education is the low prestige given to creative teachers in the medical universities. They are not motivated for the very hard process of self-learning on the way to good and effective teaching. Additionally, educated in the traditional system, we are very conservative in our thinking about medical education. The major problem is also the negotiations with individual departments to define the content of the core curriculum, taking into account the local traditional prestige of departments, depending on the size of the delivered teaching programmes. Consequently, curriculum change needs not only new study programmes, but also new professionally educated academic staff.

Curriculum change also involves remodelling the infrastructure in the medical universities — a great problem in our economic situation. PBL requires investment in teaching laboratories, clinical skill laboratories, in the computer network, internet facility, library facility, strategic decisions about the type and number of journal subscriptions, books etc. The economic difficulties seem to be greater than the "human factor" in the process of transforming the medical education system.

And now some personal remarks and conclusions. The need for change to upgrade the medical education system is recognised. The transformation means a change from didactic teaching to student-oriented learning in relation to hospital-based learning. The question arises, which way is more effective: revolution or evolution? Revolution often took a heavy toll of life... I have my personal development in teaching of physiology: from molecular physiology (biology?), through integrative physiology to patient-oriented clinical and applied physiology, i.e. the "antidromic" way — from pathology to normal physiological mechanisms. I think it is a very optimistic experience.

