

Human factors education: Lecturing solutions or problem-based learning?

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Abstract

Problem-based learning (PBL) is an instructional method that claims to provide an answer to a number of problems in higher education. Compared to traditional approaches in education, PBL appears to enhance students' motivation and to set the stage for optimal learning conditions. To facilitate learning, several conditions have to be met. Important is that relevant prior knowledge needs to be activated before new knowledge can be adequately processed. Furthermore, it is important that the learning setting is as similar as possible to the setting in which the acquired knowledge is to be used (encoding specificity). Finally, new information is better understood, processed and retrieved if students have the opportunity to elaborate on it.

Introduction

Problem-based learning is a fairly new –and in some ways revolutionary– approach to learning and instruction. Although initially developed for medical education, it carries the promise of being able to solve some persistent problems that have plagued education as a whole for years.

With the massification of higher education in the late sixties, universities and other institutes for advanced learning have become spiritless environments for many students. Since much of the training in these institutes is lecture based, students are forced to spend much of their time in lecture theatres, sometimes together with hundreds of other students, the majority of whom they don't know and will never get to know personally. In studies based on students' perception of lectures, it has been demonstrated again and again that students generally consider their lectures dull and uninspiring. Certainly, this is not the fault of the average teacher. Being able to attract the attention of a large audience and keep them interested in the subject of one's lecture requires the combined skills of a great comedian and a charismatic story teller. Of course, we all remember that one exceptional teacher, the one who made you sit on the tip of your chair, the one who made you want to scream: "Tell me more!". The fact that everyone remembers that special teacher is a clear indication that the ones that are forgotten were less able to inspire students.