

SHORT COMMUNICATION

Problem-based learning in the lecture format*Nayer Rassaian*

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In the research-centred teaching method aiming at 'discovery learning', instead of presenting the principles available in the textbooks, an initial question is presented to the students, asking them to think about a way for arriving at the answer. An example of such a question to guide active participation, in relation to referred pain, is the following: 'How is it that the characteristic chest discomfort associated with myocardial infarction is accompanied by the pain radiating into the arm?' The aim of this teaching method therefore, is not only to get access to information the class has available, but also to consider the manner for reaching such information. Learning about the research approach serves to guide the students as they explore the question presented, activating their reasoning and discovery potential in the process.

Class members are encouraged to volunteer their answer, and the lecturer responds to correct their views regarding scientific, methodological and ethical aspects, and guides their thoughts towards the conclusion.

The determining factor in applying the method is the active participation of the students, seeking and developing their suggestions, so that they are able to get closer to the goal and finally achieve the ultimate answer. After the lecture students can find confirmation of their proposals when they consult the references provided about the topic pursued during the teaching session.

The students' appreciation of this method has been investigated by means of a descriptive-analytical research project, which the medical students of seven different classes attended. In the course were included, during four semesters in academic years 1993–1995, held in Iran (17.8%), Shaheed Beheshti (18.3%), and Tehran (63.9%) Universities of Medical Sciences and Health Services. The number of students in these classes ranged between 13 in the smallest size one to 173 students in the largest one.

This research-centred teaching method was compared with the customary lecturing method aiming at 'Reception Learning'. The students' attitudes were evaluated by means of a questionnaire. The session which was to be chosen for questionnaire dissemination was selected randomly among the five final ones in a semester. The students were asked to code their questionnaire with a six digit number to avoid writing their names. These codes were noted down in front of each student's name by their representative who

kept this list away from the teacher until after marking. When results of exams were announced, the list was uncoded with the consent of the students and their representatives. The final examination for the end of the course was exactly the same as that held routinely for the students of the faculty. It should be emphasized that no other special examination was introduced for the purpose of the research other than the above-mentioned routine one. In order to evaluate their reaction to the course, taught either by research-centred teaching method or by the customary one, the examination questions consisted of three types: research essay (20 points), test exam (80 points), and class attentiveness, selected from test exam (2 points).

The results have demonstrated that 84.3% of the 562 students preferred the research-centred method, and the mean scores concerning research and class attentiveness were higher in this group than in those who chose the customary one (8.4%) (remaining students who chose a combination of the two methods were excluded from statistical analyses). The factor analyses carried out on students' attitude-variables resulted in four clusters: cognition (four factors); enthusiasm (five factors); anxiety (two factors); and not interested (four factors).

CONCLUSIONS

The objective of this teaching method is for the student to think as a scholar about most of what he or she reads. It was anticipated that the research-centred method would give rise to difficulties in the content of teaching, in managing the class, and might cause anxiety in some students. No significant difference was found between the two groups in these respects.

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