

AN INTERACTIVE PRESENTER COMPUTER PROGRAM IN TEACHING OF DRUG METABOLISM TO SMALL GROUPS OF MEDICAL STUDENTS

R.O. Juvonen, M. Turrek, I. Ripatti, P.T. Männistö and A. Raasmaja
 Department of Pharmacology and Toxicology, University of Kuopio, POB 1627,
 70211 Kuopio, Finland

INTRODUCTION

Several different kind of methods have been used to teach toxicology and pharmacology in the universities. The most common method is probably lecturing because it is very cost effective and easy to organize: only one person is required to teach at the same time to large number of students. However, it could be difficult to have a good interaction between a teacher and students during the lectures. Group works, laboratory exercises, computer simulations and web based teaching are more activating than lectures, but more resources are needed to organize them. Some new solutions have recently been introduced.

Interactive Presenter System is a product of Dolphin Interactive Ltd. It consists of two parts (Fig. 1.). 1) A hardware contains individual handsets for polling, a USB collector for recording polling and a computer for handling polling data. 2) An Interactive Presenter™ software operates the whole system and receives, handles, analyzes and reports the polling results. The whole system is light and can be packed to small bags and can be operated well after short introductory teaching.

In this study we used Interactive Presenter System during a course of Systematic Pharmacology and Drug Toxicology for medical students in April and May 2003. There were 80 voluntary lectures, 10 compulsory small group works and 10 compulsory laboratory exercises and 4 additional voluntary laboratory exercises. Multiple choice questions were asked for students during most lectures in order to activate the teaching and to get information of the learning of the topic of session. Voluntary metabolic laboratory exercise was used also as a teaching method for pharmacy students and learning during this work was compared with medical students.

AIMS OF THIS STUDY

1. To study Interactive Presenter System-based method as a technique to improve teaching and evaluate learning.
2. To study what do the medicine and pharmacy students learn during experimental laboratory exercise of drug metabolism.
3. To study if the experimental laboratory exercise of drug metabolism improves learning during systematic course of pharmacology and toxicology.



Figure 1. Interactive Presenter System.

STUDY DESIGN

1. Interactive Presenter System used in teaching and analysis during pharmacology and toxicology courses for medicine and pharmacy students.

Students	Whole course	Voluntary lab exercise	Control group	Exam test group
Medicine	150	9	89	7
Pharmacy	141	22	-	-

CONCLUSIONS

1. Interactive presenter system makes it possible to follow online learning of students even in large courses.
2. It is necessary to train uses of Interactive Presenter before the course and initially a technical assistant could be of great help.
3. This system eventually saves work time but expertise skills and more preliminary work are needed.
4. Laboratory work improves learning results by 18 %.

RESULTS

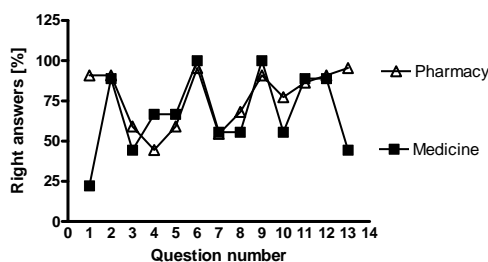
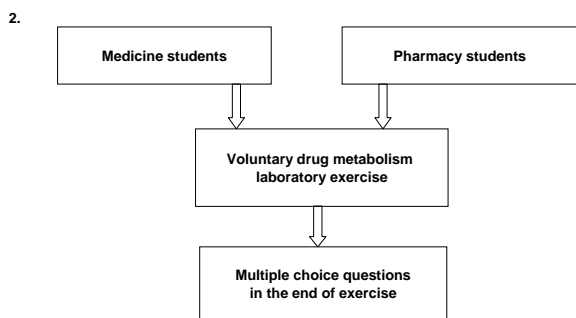


Figure 2. Answers of medicine and pharmacy students to multiple choice questions of drug metabolism. Medicine and pharmacy students answered equally after experimental part of voluntary drug metabolism laboratory exercise.

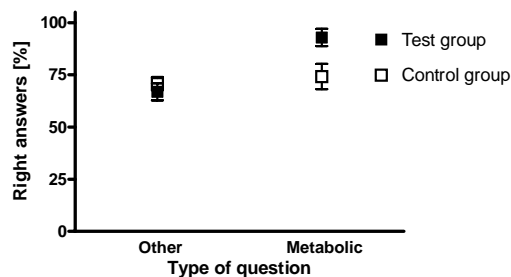
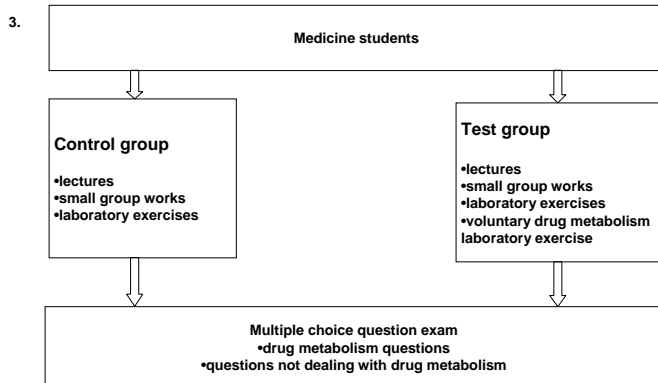


Figure 3. Laboratory work exercise teaching improves learning of medical students.