



Short reports of the latest research in *Medical Education*

Anatomy of failure

even by these standards, up to half of students would have failed

Katinka J A H Prince, Albert J A A Scherpbier, Henk van Mameren, Jan Drukker & Cees P M van der Vleuten. Do students have sufficient knowledge of clinical anatomy? *Medical Education* 2005; volume 39: issue 3, pages 326–332

Almost two-thirds of medical students failed anatomy tests, according to certain judges.

The study of Dutch medical students found different groups of judges set varying benchmarks for an anatomy test with students setting the toughest standards compared to lecturers and doctors when assessing their peers' anatomy knowledge.

But the different standards meant making a true assessment of whether anatomy knowledge levels are adequate was difficult and suggested clearer guidelines were needed.

Over the last few years, concerns have been raised about levels of knowledge among today's medical students, particularly those following innovative problem-based learning curricula. Recent studies have shown there is little difference in students' confidence or uncertainty in their own anatomy knowledge from different types of school.¹

The latest study, by researchers from the University of Maastricht asked whether medical students in the Netherlands have sufficient knowledge of anatomy at the end of year 4 which is the end of their preclinical curriculum.

To answer the question, four different panels of six to 10 judges each set a standard of knowledge for an anatomy exam. The judges

were clinicians, anatomists, recent graduates and year 4 students.

A modified Angoff procedure—estimation of the performance of borderline examinees by knowledgeable judges—was used and the anatomy test results of a national sample of year 4 students from the Netherlands' eight medical schools were compared with the standards set by the panels.

The results revealed considerable differences between the standards set by the different panels, with the anatomists and the graduates setting standards significantly lower than the year 4 students and the clinicians. In the case of the anatomists, this was contrary to pre-study expectations, which were based on their reported dissatisfaction with students' knowledge levels.



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The failure rates under the standards set by the judges were:

Graduates—26.1%

Anatomists—42%

Clinicians—57.5%

Year 4 students—64.1%

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The authors say: 'In short, every standard that emerged from the Angoff procedure would result in a substantial number of students not performing up to standard, although the number of students failing varied considerably depending on the type of judges.

The report suggests anatomists' more extensive contacts with students make them better judges of students' knowledge levels—even if they are not necessarily happy with them.

Clinicians have little contact with preclinical students and so may be unable to give a good estimate of what students know.

As expected, graduates set the lowest standards, possibly because they knew how much they had learned since year 4 and therefore expected less of year 4 students.

However, year 4 students, contrary to the expectations that they would have the most accurate picture of their peers' knowledge, overestimated their achievements.

The authors suggest the standards set by the most experienced judges – anatomists and recent graduates—would appear to be the most plausible and justifiable. Yet even by these standards, up to half of students would have failed—indicating students' anatomy knowledge is indeed insufficient.

The results also suggest that there is no consensus on what students need to know in relation to anatomy. The report concludes

that clear guidelines should be developed and agreed on by anatomists and clinicians with contributions from students and graduates.

It says: 'This suggests there is cause for concern regarding students' level of anatomy knowledge.'

However, it advises further research to clarify this, and whether it is limited to anatomy or whether a wider problem lies in identifying the content of curricula and the knowledge levels students need.

REFERENCES

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Start of the peer show?

it was the first compulsory introduction of EBM teaching in a medical curriculum

Tobias B Weberschock, Timothy C Ginn, Johannes Reinhold, Reinhard Strametz, Daniel Krug, Martin Bergold, Johannes Schulze. Change in knowledge and skills of third year undergraduates in compulsory evidence-based medicine seminars. Is peer teaching effective? *Medical Education* 2005: in press

Trained medical students are effective tutors for their peers in evidence-based medicine (EBM), a study has revealed.

Students' knowledge and skills in relation to EBM increased considerably following seminars led by their colleagues, according to German research. And students were positive about the experience, rating the seminars highly.

Researchers tested students before and after compulsory EBM seminars and discovered 'a significant increase' in knowledge and skills. The compulsory nature of the seminars meant a selection bias towards interested individuals could be excluded.

And while the researchers admit there was a lack of randomisation and difficulty differences between the question paper sets that the students answered, 'the highest score in any group before the seminar was significantly lower than the lowest score afterwards'.

When changes in the German medical licensing law in 2002 demanded the inclusion of EBM principles into the new curriculum¹, the Johann Wolfgang Goethe University in Frankfurt implemented a compulsory EBM seminar during the third year of the undergraduate medicine course—the first German medical faculty to do so. To the researchers' knowledge, it was also the first compulsory introduction of EBM teaching in a medical curriculum in Europe.

As part of this, the EBM Student Working Group in Frankfurt set out to address four questions in the teaching of EBM by peer students:

- Is there improvement in knowledge and skills of third

year undergraduates during EBM seminars?

- Is this seminar effective in providing information that can be used practically in a clinical scenario?
- What is the students' view on these compulsory EBM seminars?
- Is peer teaching in EBM effective?

The answers were all positive.

Each seminar consisted of one three-hour unit once a week for four weeks. The units looked at issues including the principles of EBM, how knowledge can be applied to therapeutic problems and solution strategies for clinical cases.

