

Public competence in science

Beware of the testers, warns **Baruch Fischhoff**

It can be psychologically rewarding to write tests evaluating other people's competence on topics that they should understand (for example, climate, nuclear power, diet, finance). Test writers get to be experts, define the knowledge that matters most, and pass judgment on others. They also get to weigh in on public affairs, as arbiters of citizens' competence to participate in issues of the day.

It can also be socially destructive to write such tests, if the resulting assessment is off the mark. Citizens whose knowledge is underestimated can be denied legitimate rights. Citizens whose knowledge is overestimated can be denied legitimate protections. Tests can even be written with such errors in mind. An incompetent public strengthens the case for rule by experts and for strong regulatory rules. A competent public strengthens the opposite case. As every teacher knows, it is not hard to write tests that a class passes or fails.

Competence testing can also promote a *deficit model* of public engagement, positioning scientists as ultimate authorities, with citizens forever scrambling to catch up – and learn the things that experts think that they should know. Deficit thinking can easily lead to confusing ignorance with stupidity, casting those who don't know as being incapable of learning.

Pathologies

Some of these failings will be familiar to those readers of *People & Science* who have found themselves grouped with the unwashed on topics outside their own expertise. One such pathology is placing the onus on citizens for not knowing facts that would be easily understood, had they just heard them. For example, late in 2002, we found that most Americans did not know that anthrax was not

contagious, that smallpox could be treated before it became symptomatic, or that panic was rare in disasters – three simple, useful facts that would have been happily learned, had they been communicated effectively.

A second pathology is accusing people of hypocrisy, when they fail to adopt every specific behavior that is conceivably consistent with a general attitude. For example, most people have long seen climate change as a real threat. They should not be dismissed as 'not getting it', when they still fly long distances (if they have far-flung families) or leave their apartments incompletely insulated (if they are renting).

A third pathology is accepting the accuracy and relevance of expert opinion without question or qualification. For example, before the ongoing debacle, citizens were often criticised for not knowing that stocks produce the best return on investment, over any reasonable time period. Now, citizens are criticised for not knowing the differences between registered and unregistered investment firms or between monthly statements issued by firms and by banks holding securities. Some financial competence can increase exposure to financial chicanery.

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Citizens' revenge

Although experts can claim unique ability to know what is really worth knowing, citizens are not completely defenceless. They can put the tests to the following test:

Is each question relevant to a decision that they are facing? If not, then they are being evaluated for their mastery of minutiae. Are they sure of the meaning of each word in each question? If not, then they are being set up to fail. Are facts that they want to know missing from the test? If not, then their needs are being ignored.

Developing relevant tests is straightforward.¹ However, it requires listening carefully to citizens, in order to understand the decisions that they face, the facts that they need, and the clarity of questions on successive test drafts. Without such a disciplined approach, competence testers can do bad, while feeling good.

¹ B Fischhoff (in press). Risk perception and communication. In R Detels, R Beaglehole, M A Lansang, and M Gulliford (eds), *Oxford Textbook of Public Health, Fifth Edition* (pp. 940-952). Oxford: Oxford University Press



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Scrutiny – a safeguard worth protecting

Phil Willis is disturbed by the latest inquiry

The current select committee system embodies the principle that government policy should be open to vigorous public scrutiny. The system has served Parliament and the public well.

Nowhere is the committees' scrutiny more necessary than where government allocates policy making and resources to independent organisations such as the research councils and the Higher Education Funding Council for England, and their main beneficiaries, the universities. Yet, as the Innovation, Universities, Science and Skills Select Committee is finding during its current inquiry into the student experience, scrutiny is met with suspicion, even hostility. We regularly hear the defensive cries of 'academic freedom' and 'institutional autonomy'.

Damaging allegations

We launched our current inquiry at a time when a barrage of potentially damaging allegations about the UK higher education system was being aired in the media. Complaints included plagiarism, grade manipulation, misuse of external examiners, pressure on academics to alter student grades, and significant grade inflation.

On first examination, there did appear to be some conflicting evidence that needed closer examination. A near doubling of the number of first class degrees since the early 1990s, and a 44 per cent rise in upper seconds, suggested a huge rise in academic performance – yet this hardly married with a 2008 survey of academics in the *Times Higher Education*.¹ According to that poll, 77 per cent of academic staff felt pressure to increase marks, 82 per cent felt that financial pressures were affecting student experience and 69 per cent felt that the rise in first class degrees was not evidence of improved standards.

The University and College Union, which represents academics at all stages of their careers, said in its evidence to the select committee that 'Our members have raised concerns about perceived "grade inflation", though they believe that it is caused mainly by pressures on examiners from above (managers and funders) as well as from students. Changing the metric, therefore, is unlikely to have an impact on "grade inflation".' And, with the boss of the Quality Assurance Agency, Peter Williams, claiming the degree classification system in UK universities to be 'rotten' and 'arbitrary and unreliable', we expected a barrage of evidence to support these claims.

Ranks closed

Not so – the university establishment across the whole sector closed ranks. Every institution was near perfect and the very organisations which put such store by 'evidence' appeared reluctant to examine what evidence appeared.

The Higher Education Policy Institute study,² which compared the amount of taught and private study time undertaken to gain a higher level degree from different universities, was dismissed as having a flawed methodology. Yet few could see the irony of clinging to a system where individual institutions were in fact the arbiter of their own standards, including degree classification.

Reluctant academics

What was more disappointing was the lack of evidence coming forward from academics themselves, for or against the premise of 'dumbing down'. Where it did arrive from academics claiming that they had been pressurised into raising grades, re-

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marking papers, or lowering standards, it was usually from mid-to-late career academics. It seems that academics towards the start of their careers appear reluctant to submit evidence. We can only speculate that younger academics do not want to get a reputation for rocking the boat and risking their career prospects. Equally it may be they are perfectly satisfied with the system – in which case it would be useful to hear their evidence.

If, as custodians of the scrutiny process, a select committee cannot penetrate our multi-billion pound, self-regulating university system, then just who will be able to offer the public, and indeed the wider community, an assurance that all is well?

1 John Gill (October 2008). "Keep it stupid, simple", *Times Higher Education*. Available at <http://tinyurl.com/ojopzz>

2 Tom Sastry and Bahram Bekhradnia (September 2007). *The Academic Experience of Students in English Universities*, Higher Education Policy Institute. Available at <http://tinyurl.com/o67tzc>



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