

Course-questionnaires as a research tool

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In the last issue of this journal, de Jong made a plea for closer links between chemical education research and the teaching of chemistry, and he argued the case for the teacher as researcher¹. Goodwin suggested that the teacher-researcher needs to collect data in ways which are not too time-consuming². Our suggestion is that really useful action research could be carried out with little additional effort by making better use of course questionnaires which are nowadays a feature of almost all university courses. There are good reasons why academics should be willing to do this.

Many (perhaps most) course questionnaires are in a standard form (at least within a given department). Typically they make little attempt to evaluate (for example) what learning has taken place, what misconceptions students may have, or whether the students have been challenged to think (become actively involved in the learning process). It is likely that many questionnaires receive no more than a cursory analysis before being filed. Their main use (if there is one) appears to be that they provide 'evidence' that departments and individuals take their teaching seriously. However, in the light of the Dearing Report³ 'taking teaching seriously' ought to involve a greater emphasis on student-centred learning and we are sceptical that conventional course questionnaires help to address this.

Our proposal is that individual lecturers (or course organisers) should be encouraged to replace existing standard-format questionnaires with one tailored to the learning objectives of the course in question. The preparation of the questionnaire would take a little extra effort, but have accompanying benefits. It would focus the mind of the teacher on the need for specific learning objectives

(preferably broader ones than the mischief words "convey information"⁴) and on the most appropriate way of evaluating whether these have been achieved. A well-designed questionnaire would also give useful feedback on reasons why some objectives may have been poorly realised. In particular they could expose the existence of misconceptions, the importance of which is emphasised by Taber in this issue⁵. Furthermore, some styles of questionnaire can heighten the learning experience by encouraging the students to reflect on (and therefore reinforce) what they have learned⁶. Different learning objectives are best evaluated by different styles of questionnaire, and many are available – some of which stretch the definition of 'questionnaire'. For example, the 'written reflection exercise' devised by Lowe⁶ and adopted by Garratt et al⁷ is not really a questionnaire in the conventional sense. However, the use of this type of free-response question can lead to insights into the students' learning which can be used to better match the teaching to the students' needs. Some implications of this process for skills development in students have been discussed elsewhere⁸. The confidence log proposed by Draper⁹, and practised by Garratt et al¹⁰, can give an unusual but potentially useful perspective on student attitude. The Osgood-style questionnaire, which invites respondents to place themselves between two contrasting statements can often be more revealing than the more commonly used Lickert questionnaire in which a numerical response is made to a single statement. As a final example, the 'action statement' approach adopted by Duckett et al¹¹ in a different context, provides another useful variant on the standard questionnaire format. The important point is to think carefully about the best method for obtaining the kind of feedback which will be of most use in a particular context.

We believe that most academics are genuinely concerned to improve their students' learning, and that the more thoughtful ones are aware that most of the course questionnaires they use do not help them to do this. Course questionnaires in this sense are a wasted

opportunity, taking up the time of students and staff alike. Making good use of this opportunity could provide information which would be of use to a wider audience than the individual course-giver, and some of the data (at least) would be publishable as action-research. Teaching is (or should be) a scholarly activity in which the teachers learn from their students and strive to improve their effectiveness as facilitators of learning. Unfortunately the university community seems to have moved away from being a single community of *scholars* committed to *learning* and is becoming a divided community in which the academics see themselves as a group of *researchers* who are also required to play their part in *teaching*. This militates against the recognition of teaching as scholarship. We suggest that both the quality and the status of teaching would be improved if academics made good use of the opportunities provided by course questionnaires for action research, and went on to publish their results.

References

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