Mapping teaching, learning and assessment in the MPharm in UK schools of pharmacy

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Abstract

Aim
To undertake a national study of teaching, learning and assessment in MPharm students in the UK.

Design
Triangulation of course documentation, 24 semi-structured interviews undertaken with 29 representatives from the schools and a survey of all final year students (n=1,847) in the 15 schools within the UK during 2003-04.

Subjects and setting
All established UK pharmacy schools and final year MPharm students.

Outcome measures
Data were combined and analysed under the topics of curriculum, teaching and learning, assessment, multi-professional teaching and learning, placement education and research projects.

Results
Professional accreditation was the main driver for curriculum design but links to preregistration training were poor. Curricula were consistent but offered little student choice. On average half the curriculum was science-based. Staff supported the science content but students less so. Courses were didactic but schools were experimenting with new methods of learning. 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was that all schools reported either little or no formal interaction with the Society on the content of the preregistration year or the articulation of the degree with the preregistration process. The national pharmacy benchmark statement produced by the Quality Assurance Agency was seen as less important: more of a hurdle to be met than a driver for change.

All schools were aware of both the widening participation and disability agenda and reported that changes or adaptations were made on an as-required basis. However, student numbers was reported as a bigger driver for curriculum change with the recent increases having an effect on how the programmes are delivered, with less small group and individual teaching being possible.

Content analysis of the documents indicated that, on average, the curriculum is equally divided between the main subject areas of pharmacology, pharmacology, medicinal chemistry, clinical pharmacy/therapeutics and pharmacy practice. The relatively high level of consistency in the curricula between the schools is likely to reflect a successful accreditation process by the Society and engagement of the schools with this process.

The balance of science and practice in the curriculum has been a frequent topic of debate. Our key findings are summarised in Panel 1. Just over half of the students (53 per cent, n=391) considered that the time devoted to pharmaceutical sciences was about right, although about one third (36 per cent, n=267) considered it to be too much. A similar proportion of students (53 per cent, n=392) agreed that the science content was necessary as a base for professional studies in the latter parts of the degree, with just under one third (29 per cent, n=215) disagreeing. Of the respondents (51 per cent, n=514), considered that pharmacology and pharmacy should be taught in all years of the M Pharm.

Teaching and learning: The course documentation provided data on the teaching and learning methods used (see Panel 2). We concluded that courses were relatively didactic with a heavy dependence upon formal lectures. The staff interviews were used to explore less clearly defined learning approaches such as student-centred learning, whether the school provided problem-based learning or teaching, and how to balance the emphasis between attitudes, skills and knowledge. Most respondents were supportive of the concept of a knowledge, skills and attitudes (KSA) map for pharmacy provided that it was indicative and not prescriptive, but resources (financial and staff) were considered a major issue in its extension. Staff recognised the need to develop an awareness of the needs for continuing professional development and most schools (11/15) were using learning portfolios as a means to encourage this.

Assessment: It is in the calculations of assessment towards the final degree that we note the most striking differences between schools. The variation in examination load within the final year is of significance to degree awards. Although earlier years make a contribution to the final degree class, in most institutions the final year is the major contributor. Panel 3 summarises the major findings about assessment of the M Pharm.

Most students considered that the amount of formal assessment was about right and that the balance between examinations and coursework was about right. However, it was interesting that students appeared to distinguish between the form of the assessment and the skills that it assessed. When asked whether they considered the focus of the M Pharm assessment was too much towards memorised knowledge, just over half agreed.

As we noted earlier, frontloading the course with science means that the professional elements of the programme contributed more heavily to the overall assessment of the later years of the programme and therefore to the degree classification. It was clear from staff interviews, that currently the assessment of professional competency is heavily focused upon competence in dispensing and pharmacy law and ethics, a finding that reflected the Society accreditation requirements.

Staff from half of the schools believed that there was probably some degree of over assessment; most students (63 per cent, n=466) agreed with the statement "I think we seem to have more assessments than other courses".

Research projects: A “significant research project” is a Society accreditation requirement, although the term “significant” is not defined. All 16 schools offer final-year research projects with topics spanning the full curriculum from laboratory science to clinical practice and professional studies. On average 40 per cent of the allocated time in the final year was expected to involve the research project, but the documented range within schools was from 26 per cent to 61 per cent. The average rated time for a project was 387 hours with a range from 183 hours to 500 hours.

There was also significant variation in the contribution of the final-year project to the overall degree classification. Data from the 13 schools where it was possible to calculate this showed that, on average, 18 per cent of the degree classification arose from the final year project, but the range was from 8 per cent to 29 per cent.

Given the importance of the project to final degree outcome, the students were asked whether they considered that their training in professional practice should be taught in all years of the M Pharm.
Examinations were the principle form of assessment for the first three years. The research project accounted for a major part of the final year. The final year contributed an average 58% of final degree classification (but the range is 40–70%). The contribution of practice to overall degree final class ranged from 21% to 63%. Staff believed there was a tendency to over assess. 76% of students (n=562) considered that the amount of formal assessment on their MPharm programme was about right. 67% of students (n=498) considered the balance between coursework and examination was about right. 57% of students (n=421) agreed that the course was weighted too far towards measuring knowledge. 40% (n=290) that it was about right.

There was widespread support from staff for the principle of multiprofessional learning, regardless of whether the respondent's own school was involved in its delivery but it was interesting to note that there was little support for multiprofessional teaching. The perceived advantages of multiprofessional learning were also similar regardless of involvement in delivery and the principal benefit was that this type of educational experience gave students a wider view of their future professional role and a better understanding of the roles of other professional groups. Sixty per cent of students (n=79) from five of the six schools that offered multiprofessional learning (n=132) found the experience either very or moderately useful.

Staff with experience of multiprofessional learning emphasised that it was difficult to organise. The common experience was that multiprofessional learning must be interactive. In addition, there was recognition of the importance of managing the sessions and of careful planning and preparation. The major findings in relation to multiprofessional learning are summarised in Panel 4.

Learning in practice placements Staff members were also strongly supportive of the concept of practice work placements. All schools provided some learning activity in local hospitals but the experience in hospital over the four-year programme varied from a few hours to about 16 days. In general placement education was heavily skewed towards the third and final year of study and in most cases placements were based upon local hospitals. Only two schools had placements in community pharmacy. A further two required structured vocational experience.

All schools recognised the need for increased access to practice placements. Staff voiced their frustration at the difficulties involved in developing this aspect of education. There was a general opinion that the major difficulty was in engaging external partners and in funding the placement teaching. Several respondents indicated that movement in this direction would engender change in the internal curriculum — placement education was, therefore, seen as a rate-limiting step for overall curriculum advance. Several schools were working on plans to improve current provision although these were developments of existing provision rather than a major advance on provision.

Students were also strongly supportive of the inclusion of placement education within the MPharm — 90 per cent (n=670) agreed that there should be a placement in at least one year of the programme and 54 per cent (n=402) agreed that there should be practice placements in every year of the programme. The major findings about placement education are summarised in Panel 5.

**Panel 3: Assessment in the MPharm Degree**
- Examinations were the principle form of assessment for the first three years.
- The research project accounted for a major part of the final year.
- The final year contributed an average 58% of final degree classification (but the range is 40–70%).
- The contribution of practice to overall degree final class ranged from 21% to 63%.

**Panel 4: Multiprofessional learning within the MPharm degree**
- Six schools offer some form of multiprofessional learning with students of other health care professions.
- One school is in the early years of working through a pilot Department of Health project on multidisciplinary learning.
- There is universal agreement on the potential benefits of learning with other professionals.
- Practical experience shows the limitations are mainly linked to resource and organisation.
- Students who have experience of this innovative practice have ambivalent attitudes.

**Panel 5: Practical placements in the MPharm degree**
- Staff are keen to expand the practical experience of students.
- All schools were offering hospital placements as part of their course although the amount varied considerably.
- Schools are weak on community or primary care placements mainly due to problems in access and resource.
- Most community practice experience is likely to be Saturday or vacation work self-organised by students.
- 90% of students (n=670) want placements and most want placements every year, not just in the final years.

**Multiprofessional teaching and learning** In this study “multiprofessional” is defined as describing co-education with other health professional students and “multidisciplinary” as co-education with students from other disciplines. Didactic teaching was also distinguished from learning where there is interaction between the various students involved.

Staff recognised a clear distinction between multiprofessional education with other health professionals and multidisciplinary education. While the latter was considered to have some value, it was considered that the primary gains in terms of health professional education were only achievable in multiprofessional education which involved interaction between the students.

Of the 16 schools, only six undertook some multiprofessional learning with students of other health care professions, one was involved in some multiprofessional teaching and five undertook some multidisciplinary teaching with other science students. In the other four schools, the whole of the pharmacy programme was delivered only to pharmacy undergraduates. One school was involved in a major Department of Health funded pilot for multidisciplinary learning but at the time of this study, this was only in the first year of operation.
must raise questions about the need for wider curriculum choice. It is notable that within the new medical undergraduate curriculum\(^9\) there is a recommendation that 25–30 per cent of the curriculum should be determined by the individual student.

The study has raised an important question about the role of the research project. There is a specific accreditation requirement for a substantial project without reference to the underlying qualities that it should develop. If the intention it to develop an appreciation and understanding of research methods and to encourage critical thinking then there are well established alternative approaches. Although generally liked by staff and students, the resource and staff issues of continuing individual projects need to be balanced against the increasing demands for clinical and practice education.

Royal Society. The preoccupation of a number of questions about the relationship of pharmacy undergraduate education and practice. We would consider the most important to be the lack of communication between schools and the Society in relation to articulation of the undergraduate degree with the preregistration process. Among the U.K. health professions, pharmacy is unusual in that the undergraduate programme is funded by the Higher Education Funding Councils as a science-based degree without any formal provision for learning within the practice environment. Thus, there is a critical role for the professional sector in the assessment of professional competence. We believe that this study provides a strong argument for a formal engagement between the Society and the schools of pharmacy to reconsider the linkage between the undergraduate degree and the preregistration training process.

It was encouraging to find that schools were also using a wide range of course work assessment and that there was evidence of innovation and experimentation in the approaches to learning methods. There was also strong support from staff for multiprofessional learning and for workplace learning in placement. However, the reality at the time of the study was that across the whole system there was little shared curriculum with other health professionals or other disciplines. These findings contrast with the world in which pharmacists and other health professionals work, where changing models of health care delivery are driving a re-evaluation of the professional boundaries and new ways of working.\(^{11,12}\) A key policy driver for health professional education is placement learning or learning in practice.\(^{11,12}\) In most other health professional education, learning in practice is integrated within the degree and so the university and the health providers (usually the NHS) are involved in a formal collaboration. This is not the case for pharmacy, which in the U.K. is funded as a science-based degree with no formal obligation on the NHS to make provision for undergraduate placements. Therefore the finding that all schools were providing formal teaching in hospitals is commendable and a positive reflection of the attitude of schools and the commitment of the NHS pharmacy departments to engage with the educational process. In the overall context it is not surprising that the length and nature of the placement varied. However, all schools found great difficulty in implementing formal placement education within community pharmacy. This is a challenge for the profession — not least because of its position on the boundary between the public and commercial sectors. Support for education is a professional obligation for doctors.\(^9\) The results from this study convinced us that, for the future development of professional pharmacy education, there needs to be a similar obligation within pharmacy that extends from the individual professional to the corporate operator. The provision of Saturday and holiday work experience in community pharmacy for pharmacy undergraduates is desirable but not enough.

**Recommendations**

Our study raised issues about professional competence and performance and its assessment within the pharmacy undergraduate degree and professional registration training. As a result of the findings of this study we recommend:

- An immediate further review of the scope and method for the accreditation process in partnership with the schools of pharmacy
- A fundamental review of the interrelationship between the undergraduate degree and preregistration training so that knowledge, skills, attitudes and beliefs can be developed systematically during a structured period of university and practice learning
- Formalisation of a joint working group between the Royal Pharmaceutical Society and the schools of pharmacy to develop a forward strategy with respect to the academic workforce and the access of additional funding to support placement education of pharmacy undergraduates

which currently the only mandatory requirements for professional competency are linked to dispensing and pharmacy law. This is an area outside education where the profession must lead through clear definition and articulation of the core determinants of a pharmacist.

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**References**
