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GPHE 166479—21/3/2006——206731

Pharmacy Education, 2006; 00(0): 1–7

Teaching social pharmacy: The UK experience

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Abstract

Social pharmacy is a relatively recent introduction into the curricula of UK pharmacy schools. As little is known of how this subject area is currently taught, an investigation was undertaken to establish the nature and content of social pharmacy teaching in UK schools of pharmacy. A self-completed questionnaire was issued electronically and via post to the member of academic staff responsible for the design and development of social pharmacy teaching within each UK school of pharmacy. A 100% response rate was achieved. Currently, all pharmacy students in the UK are taught and assessed in social pharmacy. Courses vary in content and emphasis throughout the UK, but they have in common an emphasis on defining and measuring health and illness, social factors and health and health inequalities. Social theory was taught in less than half the schools surveyed. Student contact hours in social pharmacy varied from 7 to 83 h, with a mean of 30 h. In six schools social pharmacy was taught in each year of the course, whilst in three schools it was taught in one year only. Social pharmacy was seen as bringing an additional perspective to both scientific, drug-focussed aspects of the course as well as to the clinical and practice components. In conclusion, social pharmacy is an established and often integrated component of the pharmacy degree at UK schools of pharmacy, which those responsible for teaching see as maintaining or extending its position within the curriculum in future years.

Keywords: *Behavioural science, pharmacy, pharmacy education, social pharmacy, social science, survey*

Introduction

In 1988, the Royal Pharmaceutical Society of Great Britain (RPSGB) convened a working party to consider the teaching of social and behavioural sciences in the undergraduate pharmacy curriculum. Its deliberations, published in 1989 (Working Party on Social and Behavioural Science, 1989; Pharmaceutical Journal, 1989) were framed by the recommendations of the Nuffield Inquiry into Pharmacy (1986). Among its 13 recommendations, was that "all schools of pharmacy should include teaching in the social science aspects of pharmacy in the undergraduate pharmacy degree course." These recommendations derived from the recognition that pharmacists, along with all other health professionals, should in the future broaden their professional remit to include the patients' social as well as physical circumstances, and in particular recognise how this impacted on patients' medicines use. Such changes in pharmacists' activities should be reflected in appropriate changes to pharmacy curricula. Though its relevance to professional practice for pharmacists was clear, integrating a social science perspective into a densely packed curriculum posed a number of logistical and pedagogic issues—who was to teach it? What should be taught under its aegis? What evidence base could justify its inclusion?

Such issues have already been robustly addressed with regard to medical education and since the 1980s sociology has been formally introduced into the medical curriculum of most UK medical schools. Social and behavioural sciences has since evolved from a discrete topic area taught within the pre-clinical years, and is frequently regarded as having a novelty value and

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ISSN 1560-2214 print/ISSN 1477-2701 online © 2006 Taylor & Francis
DOI: 10.1080/15602210600665066

at worst regarded contemptuously by some students as an irrelevance. The publication in 2003 of the General Medical Council's report: *Tomorrow's Doctors*. Recommendations on Undergraduate Medical Education indicates just how important it is to integrate the social and behavioural sciences as equally important elements within the medical curriculum alongside more traditional medical sciences, such as anatomy, physiology and pharmacology: "Graduates...must understand relevant parts of the behavioural and social sciences...and critically evaluate (such) evidence to provide a firm foundation for medical practice" (General Medical Council, 2003).

Curriculum development

The pharmacy degree has undergone a significant overhaul in terms of length (4 years rather than 3) content and mode of delivery, since it was first recommended that social science be included. Rather than studying discrete subjects, students are increasingly exposed to an integrated curriculum which breaks down the traditional discipline specific barriers. This approach aims to provide students with a coordinated understanding and comprehensive knowledge and expertise in the key aspects of the preparation, distribution, actions and uses of drugs and medicines. The RPSGB expects this integrated approach to learning will continue, preparing students for increasing responsibilities as pharmacists in diagnosis of minor illnesses, prescribing and a broader public health role in health promotion (Department of Health, 2003).

Although a relatively recent introduction social pharmacy is now established as an essential part of the pharmacy curriculum. For instance, the Quality Assurance Agency (QAA) Pharmacy Subject Benchmark Statement (QAA, 2002) requires MPharm courses to contain "the social and behavioural sciences relevant to pharmacy" and students should be exposed to "health services research methodology." Moreover, The RPSGB's Indicative Syllabus (RPSGB, 2002) includes "principles and methodologies of the social and behavioural sciences relevant to pharmacy", "health and illness: definitions and perceptions" and "social services research; methods and results relevant to pharmacy."

The Nuffield Inquiry (Nuffield, 1986) referred to the social and behavioural sciences, a term perpetuated by the QAA and RSPGB. However, over recent years this subject area has become increasingly referred to as Social Pharmacy as the emphasis is placed on social aspects of professional practice, in contrast to the social scientific study of pharmacy. Nonetheless, integrating within a natural science dominated curriculum, social-scientific principles applied to pharmacy presents considerable logistical problems, particularly for schools whose curricula have developed to take account of scientific advances in pharmaceutics, pharmacology, chemistry and biotechnology, etc. This paper reports the findings of an exercise to explore this challenge by examining the form, content and nature of social pharmacy teaching in all fully established UK Schools of Pharmacy.

Method

A self-completed questionnaire and covering letter was sent by e-mail and post to the member of staff responsible for the teaching in this subject area at each of the established 16 UK schools of pharmacy offering a full MPharm programme. Newly established pharmacy schools with only one or two years of students were excluded from the study as we wished to explore the content and nature of teaching across all years of MPharm programmes. A reminder was sent to non-respondents after seven days, followed up by a telephone reminder. Responses were received by e-mail, post or fax, and a 100% response rate was achieved. The questionnaire comprised 18 questions and included a section for respondents to add free text (additional comments) regarding the subject matter of the investigation.

For the purposes of this study, social pharmacy referred to "those aspects of the taught curriculum which address issues relating to how pharmacists draw on an understanding of patients and their use of medicines in what might be loosely termed a social rather than pharmaceutical context". Pharmacy law and ethics and communications skills were specifically excluded.

Results and discussion

Social pharmacy was taught at all schools, and the respondents recognised the term and were able to respond to the questions. Some respondents however, expressed dissatisfaction with the term:

> "Social pharmacy—a very poor term..." (SP20).

> "Social pharmacy is not a term we commonly use although we recognise it and acknowledge its importance" (SP24).

In seven of the schools, social pharmacy was taught under various alternative headings. These included "Health Psychology, sociology of health and illness" (SP11); "Professional practice" (SP13); "Social and behavioural science" (SP15); "Information and communication skills, health education, pharmacy and health" (SP21); "Social and behavioural aspects of pharmacy, pharmaceutical organizations, structures and services" (SP22); "Social pharmacy and practice, introduction to pharmacy and pharmaceutical public health" (SP23) and "Pharmacy practice, social/public health" (SP24).

Responsibility for administering and teaching social pharmacy courses

Thirteen of the 16 individuals responsible for administration of social pharmacy courses were academic pharmacists, and three were social scientists (Table I).

In all but one of the schools of pharmacy, staff involved in the delivery of social pharmacy teaching included registered academic pharmacists (Table II). In the one school where a pharmacist was not directly involved with the course, all teaching was undertaken by a social scientist. Others involved in teaching were hospital and community pharmacists, social scientists and a general practitioner.

The introduction of social pharmacy into the curriculum and its subsequent organisation has been driven primarily by pharmacists rather than social scientists. The presence of registered pharmacists amongst those delineating what should and should not be taught in terms of social pharmacy will determine the content and nature of the learning experience. They can draw on their own educational backgrounds and experiences in practice to ensure that courses are appropriate for pharmacists' professional needs. Though professional experience being brought to the teaching of social science is clearly valuable, it is not in itself adequate, nor is simply an understanding of the methodological and theoretical principles underscoring social scientific enquiry. Crucially, what is required is an ability to provide content of immediate relevance to professional practice, avoiding over theorising of the material, and imparting the nature of this subject as considerably more than "dressed up common sense".

The Nuffield Report (1986) stated that efforts should be made to recruit social and behavioural scientists to the teaching staff of schools of pharmacy. The Council of the RPSGB decided that ideally social and behavioural sciences should be taught by pharmacists with necessary expertise, though it agreed that it would be necessary to recruit specialists (Pharmaceutical Journal, 1989). Table II shows that in seven schools social scientists are involved with teaching of pharmacy students, showing that an inter-disciplinary approach has been adopted. In the remaining nine schools no such inter-disciplinary approach to teaching has been adopted, though it is unclear whether social scientists were involved or consulted when teaching sessions were developed.

Table I. Staff responsible for administration of social pharmacy courses.

Staff	Schools
Registered academic pharmacist	13
Registered hospital pharmacist	0
Social scientist/psychologist	3
Other academic staff	0
Other	0

Table II. Staff teaching on social pharmacy courses.

Staff	Schools
Registered academic pharmacist	15
Registered hospital pharmacist	3
Social scientist/psychologist	7
Other academic staff	0
Technician	0
Postgraduate demonstrator	0
Other	1 × community pharmacist teacher practitioner, 1 × general practitioner

The numbers of pharmacists employed by schools of pharmacy has decreased over recent years (Taylor & Harding, 2002), such that academic pharmacists are becoming a scarce resource. However, they are used extensively to teach this particular aspect of the degree. If pharmacists are only able to bring their own experiential knowledge of what they perceive to be the relevant social aspects of professional practice as practicing professionals, there is a possibility that the scientific basis of this material becomes eroded and packaged to students as a series of key facts—the very antithesis of social scientific enquiry, vis "we have taught you to recognise the symptoms, understand disease aetiology and the underlying pathology, the appropriate drug and dosage form and how to counsel the patient—but, by the way, the patient may never present in your pharmacy because…".

Organizational arrangements for teaching social pharmacy

There was a widespread distribution in the length of time that social pharmacy had been taught at each school (Table III), with the majority established for at least five years.

Social pharmacy is thus embedded in the MPharm curriculum of all the schools, assuming variable amounts of curriculum time. For example, some schools devote more than ten times the curriculum space to teaching this topic compared to others, with a minimum of 7 h and maximum of 83 h (Table IV). The mean number of student contact hours was

Table III. When social pharmacy was introduced onto the curriculum under its present heading.

Introduction of course	Schools
Within the last two years	2
Between two and five years ago	2
At least five years ago	7
At least ten years ago	4
Do not know	1

Table IV. Teaching methods and contact hours allocated to social pharmacy.

School	Lectures	Practicals	Seminars	Tutorials/workshops	Problem-based sessions	Hospital visit	Total
1	6	0	0	6	0	0	12
2	10	20	0	0	0	0	30
3	12	0	0	9	9	0	30
*4	–	–	–	–	–	–	–
5	8	0	3	0	0	0	11
6	5	8	2	0	0	0	15
7	3	0	4	0	0	0	7
*8	–	–	–	–	–	–	–
9	78	0	0	0	0	0	78
10	12	0	0	0	0	0	12
11	20	9	0	0	0	0	29
12	63	0	0	0	20	0	83
13	16	12	0	0	0	0	28
†14	–	–	–	–	–	–	–
15	14	5	2	0	0	0	21
16	18	0	18	0	0	3	39
Total ($n = 13$)	265	54	29	15	29	3	395
Per cent	67	14	7	4	7	1	100

* Unable to say as it was integrated across a number of other topic areas.
† Unanswered question.

30.4 h. We previously reported a six-fold difference in the teaching hours allocated to extemporaneous dispensing teaching within the same schools (Chowdhury, Taylor, & Hearding, 2003). School 7 with the lowest number of hours devoted to social pharmacy was the school with the highest number of teaching hours devoted to extemporaneous preparation. Clearly then, different schools place different emphases on how the balance between subjects should be derived, and it seems for this relatively recently introduced subject, variability is particularly evident. The Working Party on Social and Behavioural Science (1989) recommended that schools of pharmacy should provide a minimum of 20 h per year of teaching in social and behavioural science (additional to communication skills teaching). At the time with a 3-year BPharm this correlated with a total of 60 h through the degree programme, with the 4-year MPharm this would equate to 80 h teaching. Only two schools reported contact hours in excess of 40 h, and five schools reported contact hours of 15 h or less. Whilst information regarding directed student learning is not available, it is evident that in the majority of schools students receive considerably fewer hours of social pharmacy teaching than was envisaged by the working party.

In 6 of the 16 schools, social pharmacy is taught in each year of the course. This contrasts sharply with three schools where it is only taught during one of the four years of the MPharm course (Table V). In five schools social pharmacy is taught in 2 years and in two schools over 3 years. In 11 schools social pharmacy is taught in the final year.

Thus, some schools maintain throughout the whole course a theme around the social and behavioural sciences (as envisaged by the Working Party)—which might indicate the perceived importance of this within the MPharm course. Others however teach this in specific years or just in the final year, compartmentalizing it, and perhaps reducing the impact it might make on pharmacy students' understanding of pharmacy's place in society (Harding & Taylor, 1991). Social pharmacy should be introduced in such a way that it allows students to continually reflect on the social context of pharmacy practice. If the first opportunity they have is in their final year this might suggest that this topic is not so much an integral element of pharmacy education but introduced almost for its novelty value or afterthought as a discrete

Table V. The year(s) of the MPharm programme in which social pharmacy is taught.

School of pharmacy	Year 1	Year 2	Year 3	Year 4	Total number of years
1	x		x		2
2		x	x	x	3
3			x	x	2
4	x	x	x	x	4
5	x	x			2
6	x		x		2
7				x	1
8	x	x	x	x	4
9	x	x	x	x	4
10			x		1
11	x	x		x	3
12			x	x	2
13	x	x	x	x	4
14	x	x	x	x	4
15	x	x	x	x	4
16			x		1

element of the course. Significant inroads have already been made in many schools of pharmacy with the introduction and increasing integration of pharmacy practice. However, constraints (logistical and attitudinal) will always limit the time allocated to all subjects within the curriculum.

> Responding to this questionnaire made me think that social pharmacy should possible have a role in later years of the course. However, time constraints make it difficult to include everything and would also hinder development of material suitable for M level delivery (SP16).

Eleven respondents thought that the current weighting of social pharmacy in the curriculum was about right. However, five felt there was a disproportionate weighting against social pharmacy, with one reporting that the curriculum was "strongly" weighted against social pharmacy.

Assessment

In all schools, student ability in social pharmacy was formally assessed. In 13 schools, assessment took the form of exam questions. Nine used continuous assessment and one required students to undertake a 2500 word essay. In no schools was the assessment integral to pharmacy practice. Thus, this aspect of the pharmacy degree is assessed separately, indicating that the schools perceived the importance and relevance of this subject and that students should demonstrate appropriate knowledge and understanding.

Social pharmacy as a discrete or integrated subject

In four pharmacy schools social pharmacy was taught as a discrete subject, whilst 11 taught it in an integrated manner, with one adopting both approaches. In two schools social pharmacy was so integrated within the curriculum it was not possible for respondents to estimate the hours of teaching in their subject area (Table IV). Many respondents pointed to the integrated nature and desirability of integration:

> "Need(s) to be properly integrated in order for undergraduates to grasp significance. I've deliberately used the word integrated rather than "relevant" (SP17).

> "Should not be seen as "stand alone"—theory perhaps alone, but application integrated towards patient care" (SP11).

> "... social pharmacy is scattered through the course and is not taught as a discrete entity..." (SP12).

> "We find it (social pharmacy) is best taught as a common thread to our teaching of the professional aspects of pharmacy rather than a discrete subject" (SP24).

> "Some degree of cross over with our public health coverage, e.g. definition and measurement of health and health inequalities" (SP23).

The scope of social pharmacy

Key topics within "social pharmacy" broadly represented within all schools were definitions of health and illness, measuring health and health inequalities (Table VI). Perhaps surprisingly there was less representation of social perspectives on inter-professional working given the current policy towards greater skill mix in health care delivery and breaking down of traditional professional boundaries (Department of Health, 2000). Also, surprisingly, issues around professionalisation, i.e. what defines pharmacy as a privileged occupational occupation, were not covered by some schools, yet all health professions are undergoing changes in the roles and remits, e.g. pharmacist prescribing, medicines management, technicians dispensing.

Social theory was taught in less than half the schools (Table VI). The absence of social theory may mean that students do not ever see the theoretical underpinnings of social science, such that the subject is seen as little more than common sense. The paucity of theory may reflect the lack of appropriate teaching resources and the non-social scientific background of those responsible for creating and teaching courses. However, it may be that the exclusion of social theory is a conscious decision to avoid overloading students unnecessarily and maintain the clear relevance and focus for students.

Five schools reported teaching "other" subjects taught under the heading of social pharmacy, these included: health psychology, health related behaviour (SP11); models of health, patterns of disease, health promotion (SP13); medicalisation, social capital, pharmaceutical industry, experience of health and illness, health care relationships (SP20); policy

Table VI. Subjects taught under the heading of social pharmacy.

Subject	Number of schools
Defining health and illness	16
Measuring health and illness	16
Social factors and health	16
Health inequalities	15
Social theory	6
Inter-professional relations	12
Professionalisation/socialisation	10
Other	5

development, evidence based medicine and its impact on prescribing, social consequences of drug misuse and abuse, how pharmacy fits into the health world (SP22); public health concepts (SP24).

The Government aims to increase inter-professional learning in the education of health professionals (Department of Health, 2001) and recent evidence indicates that six UK schools of pharmacy have some multidisciplinary teaching or learning (Langley, Wilson, Jesson, Clarke, & Hatfield, 2005). However, there was little evidence of shared teaching and learning of this topic despite social and behavioural science applied to health being represented on medical, nursing and other professions allied to health. Two schools reported shared teaching, with 14 undertaking no such activity.

> "We have a programme set up in the 1st year with pharmacy being a group of 1400 students where subjects such as consent, truth telling and communication skills ate taught (SP18)."

Nor is there any evidence that provision was made for students to extend their understanding of social pharmacy beyond the core content of the curriculum. Only one school offered a special option in social pharmacy, 14 offered no such option, whilst one school permitted optional learning only via a "practical" project in the final year. This might reflect either its low priority in the curriculum, that there is insufficient material to merit an option, or that there is insufficient expertise within the teaching teams to allow students to explore social pharmacy at a higher level.

Perceptions of social pharmacy

Within a largely traditional science-based pharmacy curriculum, social pharmacy is a relative newcomer. Its inclusion into the curriculum thus needs to be justified in terms of its relevance to professional practice. There is a widely held recognition of its relevance by both students and academic colleagues but opinion was divided on whether it was interesting or not.

Student perception

The majority of respondents (10) reported that their students found social pharmacy relevant and interesting, two reported students found it relevant but not interesting, whilst no students found the subject irrelevant. Four responders reported that they did not know students' perceptions.

> "BIG split of student opinion, some dislike it intensely, some get very enthusiastic" (SP11).

> "Older students (postgrads or mature students) are more likely to see the relevance of social issues for pharmacists" (SP12).

Staff perception

Staff perception was more split. Two reported that colleagues generally found the subject irrelevant and uninteresting, three said colleagues found it relevant but not interesting and four relevant and interesting. However, nearly half (7) either did not know their colleagues perceptions or felt unable to generalise because of the widely differing views of staff.

> "Depends on colleagues. Most are OK about it" (SP25).

> "Pharmacy is still overwhelmingly a science based subject, dominated by the biosciences. Social pharmacy—a very poor term—is viewed by clinical/science staff as a "bit of an add on". It is not considered important. Pharmacy needs to consider where it is going and where HSR (health services research) and pharmacy practice fit in the curriculum" (SP20).

The likely future of social pharmacy teaching

All respondents believed social pharmacy would continue to be taught at their school over the next 5 years. Nine believed teaching hours would remain approximately the same, with seven believing these would increase. Thus, social pharmacy has an established and sustainable place within the curriculum. This compares to a study of teachers of extemporaneous preparation in UK schools, none of whom reported that teaching hours in that subject would be likely to increase in the future (Chowdhury et al., 2003).

What does social pharmacy add to the existing curriculum to prepare pharmacists for practice?

Social and behavioural science was perceived by the late 1980s to be a desirable component of the pharmacy curriculum for pharmacists seeking to undertake roles wider than the traditional activities associated with dispensing medicines. Calls for its inclusion sought to address the over-emphasis on basic science in curricula at that time. Now, aspects of the social and behavioural sciences are required by the RPSGB and QAA to be present in the modern curriculum. Consequently, respondents were asked, using free text, to indicate what they thought social pharmacy brought to the existing MPharm curriculum, by way of preparing pharmacists for their practice. The responses indicated that social pharmacy brought something additional to the basic, scientific drug-focus of courses and in addition contributed something extra to the clinical and practice elements of courses:

"Makes theoretical learning relevant to their actual practice and opens them to wider ideas than clinical drug issues" (SP12).

"Moving students from a drug focus to a patient, population and practice/policy perspective. Many have never considered how pharmacists can contribute to health in a very wide sense, apart from their dispensing function" (SP22).

"A sense of perspective and understanding of health and the role of medicines in health services within a social context" (SP23).

"Awareness of a holistic approach to treating a patient and thinking outside of "a prescription" and clinical evidence" (SP26).

Conclusion

Social pharmacy has a clear presence in the undergraduate curriculum, but there remains considerable variability in both what is taught under its aegis, and how it relates to professional practice. For many years similar social scientific content relevant to medicine was also represented in the medical undergraduate curriculum. However, curriculum reform has led to a far greater degree of integration of what is increasingly termed the "human sciences". This term encompasses issues such as ethics and the humanities as well as the social sciences. The mode of teaching has also developed with considerable emphasis on problem-based learning (PBL). However, despite the trend towards integrated curricula for health professionals, only two schools employed PBL to introduce the social sciences to pharmacy students. Yet this method is ideal to allow integration of differing perspectives to a particular issue. Social science was introduced into the pharmacy curriculum some years after its introduction into undergraduate medical education. In some respects it might be argued that pharmaceutical education lags behind medical educational innovations. Certainly though, there is evidence of the integration of social pharmacy within the curriculum, with 12 schools having some measure of integration and two schools having subjects so closely integrated that it was not possible to delineate the hours set aside for social pharmacy teaching.

Since the RPSGB Working Party on the Social and Behavioural Sciences in Pharmacy reported some 16 years ago, its recommendations still have yet to be fully implemented. This is particularly poignant given the rapidly evolving nature of professional roles within the health sector, many of which now require practitioners to have an appreciation of the social elements which impact on health in order to fulfil their role, not only as medicines experts but as community based public health practitioners with an expanding brief. It is apparent from this survey that social pharmacy now has an established foothold in the pharmacy curriculum. However, along with other subjects, it has to have a relevance to professional practice. Clearly, some elements of social pharmacy are directly relevant to professional practice whilst others, thought appropriate, may be of less immediate relevance. Striking an acceptable and appropriate balance might best be achieved by a shared appreciation of the scope of pharmaceutical and social sciences. This in turn may require a greater level of integration between the disciplines and breaching the divide between the social and the natural life sciences.

Acknowledgements

The authors would like to thank all the respondents who replied so quickly to the questionnaire, without coercion. It was heartening that a 100% response to the questionnaire was achieved from each UK school of pharmacy, indicative of the collegiate spirit which exists between those teaching in the same subject area in the different schools.

References

Chowdhury, T., Taylor, K. M. G., & Harding, G. (2003). Teaching extemporaneous preparation in UK schools of pharmacy. *Pharmacy Education*, *3*, 229–236.

Department of Health (2000). *The NHS plan: A plan for investment. A plan for reform*. London: The Stationery Office.

Department of Health. (2001). *Working together—learning together. A framework for lifelong learning in the NHS*. London: Department of Health.

Department of Health (2003). Consultation document, http://www.dh.gov.uk/Consultations/ClosedConsultations/ClosedConsultationsArticle/fs/en?CONTENT_ID=4068353&chk=Y2fMuy (accessed 22/09/05).

General Medical Council (2003). *Tomorrow's doctors. Recommendations on undergraduate medical education*. London: GMC.

Harding, G., & Taylor, K. M. G. (1991). Social science in pharmacy: A learning experience? *Pharmaceutical Journal*, *246*, 539.

Langley, C. A., Wilson, K. A., Jesson, J. K., Clarke, L., & Hatfield, K. (2005). Multidisciplinary learning in the MPharm degree. *International Journal of Pharmacy Practice*, *13*, R22.

Nuffield Committee of Inquiry into Pharmacy. (1986). *Pharmacy: A report to the Nuffield foundation*. London: Nuffield Foundation.

Pharmaceutical Journal (1989). Working party recommends social sciences teaching to undergraduates. *Pharmaceutical Journal*, *242*, 228.

Quality Assurance Agency for Higher Education (2002). Pharmacy subject benchmark statements, www.qaa.ac.uk/crntwork/benchmark/phase2/pharmacy.pdf

Royal Pharmaceutical Society of Great Britain (2002). Indicative syllabus for UK pharmacy degree courses, www.rpsgb.org.uk/pdfs/eddegnewreq.pdf

Taylor, K., & Harding, G. (2002). The demise of professionally registered academics: A challenge for pharmacy. *Pharmaceutical Journal*, *269*, 604.

Working Party on Social and Behavioural Science (1989). *Report of the working party on social and behavioural science*. London: The Royal Pharmaceutical Society of Great Britain.