Pharmacy Education, 2002 Vol. 2 (3), pp. 151–160

Abstracts

Returning Marked Examination Scripts to Students

S. MURDAN[a,*] and M.P. ENOCH[b]

[a]*The School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, UK;* [b]*Energy and Environment Research Unit, The Open University, Walton Hall, Milton Keynes MK7 6AA, UK*

**Email: sudax.murdan@ulsop.ac.uk*

The School of Pharmacy, University of London, is currently in the process of returning marked examination scripts to second and third year students for the first time. This is not yet a widespread practice. No other pharmacy departments in the UK returns marked examination scripts, although students can look at their papers under supervision. In this paper, we report on a study that was conducted to gauge how the policy will work in practice. The aims of the study are to gain an insight into the reasons behind the exercise, the technical side of its implementation, the reaction and concerns of staff, the students' perspective, and to determine whether the objectives of the exercise are achieved. This is being done through a series of interviews with the key stakeholders, both before and after the scripts are returned.

***Objectives of the policy*:** Initial investigations reveal that the primary objective is to enable students to learn from their mistakes so that the examination acquires some educational value as well as being an assessment tool. Other objectives include improving transparency, accountability and increasing the chances that mistakes, such as incorrect addition of marks, will be found and rectified.

***Implementation*:** Staff were advised that scripts will be returned and so answers should be annotated. Every page of the exam book should be marked in some way and underscored to indicate that they have been seen and to provide some guard against alteration of answers. After the internal examination board meeting, students will be invited to collect their scripts from the teaching office, on presentation of an identity card.

***Staff perspective*:** The academic staff seem to be divided into three broad groups: those who are passionately for the idea; those who are against it; and those in the middle, who are either unconcerned or warming up to the idea after an initial negative reaction. Support for the idea is always linked to the educational benefit to the students who, it is expected, will learn from their mistakes. On the other hand, a number of staff are concerned about the time involved in annotating each script and in dealing with large numbers of students who will query marking schemes, compare answers with their peers and challenge marks. In particular, it is predicted that those querying marks will not be the poor performers, but those who achieved high marks and want detailed feedback about the lost marks. There is also a worry that some examination scripts will be altered. Staff who are less concerned either think that the policy is inevitable as society is becoming more transparent, or that few students will query their marks.

***The aftermath*:** The "after" interviews will take place once scripts are returned. It is intended that a number of students will be asked what they feel about receiving their marked exam scripts and if it was of benefit to them. Staff will also be quizzed as to whether their concerns have materialised, and, if so, how these were dealt with. Finally, suggestions for the future will be made.

ISSN 1560-2214 print © 2002 Taylor & Francis Ltd
DOI: 10.1080/1560221021000041924

The Assessment Procedures used in the Level III Drug Delivery Module at Queen's University Belfast

S. BARKER* and D. CRAIG

School of Pharmacy, Queen's University Belfast, 97, Lisburn Road, Belfast BT9 7BL, Northern Ireland, UK

**Email: s.barker@qub.ac.uk*

INTRODUCTION

The Level 3 Drug Delivery unit is a half-module consisting of 36 conventional lectures, 18 h of a practical project (6 × 3 h), 18 h of a literature review project (6 × 3 h) and 24 h of self directed study, making 96 h in total. Students work in groups of six or seven for both the practical and literature review projects. Over the course of the semester, each student will undertake one practical project and one literature review project, these being supervised by a different member of staff. Five weeks are allocated for the projects, with the sixth week being a mini-conference. In the mini-conference, students who have undertaken a practical project present a scientific poster (one per group), dealing with their work, results and conclusions. As in a real conference, the students are questioned on their work by staff and the other students. Students who have undertaken a literature project give an oral presentation, with each student speaking for 5 min as part of the group's presentation. In addition, the group must produce a 3000 word report on their topic. A group prize is awarded for the best poster and individual prizes are awarded to the best oral speakers. The prizes are edible. This year we have introduced into the module a Diagnostic Feedback Test midway through the semester and a revision quiz in the last scheduled lecture slot.

ASSESSMENT PROCESSES

Assessment is carried out in a variety of ways. A conventional, unseen written examination of 3 h duration, consisting of eight compulsory short-answer questions and three (from five) essay questions, accounts for 80% of the marks of the unit. The practical project and the literature project each account for 10% of the marks of the unit. The practical project assessment is further broken down into components from supervisor marking of the group's ongoing performance and from supervisor and second staff member marking of the poster presentation. The mark is therefore a group one. The literature review project assessment is further broken down into components from supervisor marking of the group's ongoing performance, supervisor and second staff member marking of the report, and assessment of the oral presentation. The mark is therefore an amalgamation of a group mark and an individual mark. In both the practical project and the literature review project, student self and peer assessments of performance are obtained, but are used only for information and do not contribute towards the students' final marks. The Diagnostic Feedback Test in week eight is formative in nature, with the quiz in the last lecture slot of the semester being designed to be a light-hearted revision aid.

CONCLUSION

A range of assessment procedures is used in the Level III Drug Delivery module, to enable estimation of the students' abilities in a number of different areas. For the students, this is extremely beneficial, as it gives them an overall impression of the abilities and behaviour patterns. For the course delivery team, the assessment processes actually work very well but there is a large amount of mark compilation to be undertaken by the module co-ordinator, particularly in the case of the group practical and literature review projects. Much time is spent compiling the peer assessment comments, so a means of streamlining this in future may be beneficial.

Development of Professional Doctorates in Healthcare Disciplines

A. CASTLE*, G. MILLS, V. BUNKER and J. PORTLOCK

University of Portsmouth, Centre for Radiography Education, St George's Building, Portsmouth PO1 2HY, UK

**Email: alan.castle@port.ac.uk*

The Ph.D. degree is often regarded as a qualification for a subsequent academic career, or a "preparation for a life of scholarship" (McGinnety and McDougal, 1997). The application of research training and methodology to a narrow field of study leads to a monograph thesis. Universities are now having to re-shape Doctoral level learning by providing flexible, part-time, work-based "Professional Doctorates" (PD). The equivalence of the PD degree to the Ph.D. has been acknowledged by the Quality Assurance Agency (2001) and they have been described as "being equal in rigour but different in substance" (Mayhew and Ford, 1974).

A recent survey of English universities noted 109 PDs available at 38 different institutions (Bourner *et al.*, 2001). Evidence also suggests that PD graduates attract comparable job offers and career progression to those with traditional Ph.D. qualifications.

The University of Portsmouth has pioneered a unique Doctoral level programme that is flexible, part-time and work-based, allowing for the development of advanced research and CPD skills in a multi-disciplinary environment. It increases professional knowledge, as well as offering the opportunity to undertake relevant, work-based research and professional development projects. These projects bring together the expertise of the student, the research skills of the academic supervisor, and an identified development in "leading edge" practice in patient care and/or service delivery.

Part 1 consists of four "taught" units. Assessment is by a portfolio of written evidence, oral presentations, an article suitable for publication in a peer-reviewed, professionally relevant journal and the submission of a structured, coherent and realistic research proposal for the subsequent Professional Research and Development unit.

Part 2 is the Professional Research and Development unit that is designed to enable students to make a significant and original contribution to their profession. This may involve one or two pieces of practice-based research linked with a commentary demonstrating the relevance of the work to their professional practice. Final assessment involves the submission of a detailed report (approximately 30,000 words), an oral presentation and a viva voce examination. The student's area of professional practice, together with the nature of their investigation undertaken in Part 2, determines the title of the PD awarded (i.e. Pharmacy, Biomedical Sciences, Nursing, Medical Imaging, Chiropractic). The structure of the programme creates a genuinely multi-disciplinary learning environment.

The University of Portsmouth is currently looking at means of extending the existing model to enable other professions allied to medicine to participate in work-based Doctoral level learning. Long term it is hoped this new initiative will enhance career opportunities and improve patient treatment and care.

References

Bourner, T., Bowden, R. and Laing, S. (2001) "Professional Doctorates in England", *Studies in Higher Education* **26**(1), 65–83.

Mayhew, L.B. and Ford, P.J. (1974) *Reform in Graduate and Professional Education* (Jossey Bass, San Francisco).

McGinnety, J.A. and McDougal, R. (1997) *The Professional Doctorate (Part 1): An Old Qualification in a New University* (University of London, London).

Quality Assurance Agency (2001) *Framework for Higher Education* (QAA, Gloucester).

Objective Structured Clinical Examinations (OSCEs) in Pharmacy Undergraduate Education

J.H. BELL, R.M. EDWARDS* and S.L. HUTCHINSON

School of Pharmacy, The Robert Gordon University, Schoolhill, Aberdeen AB12 3NN, UK

**Email: r.edwards@rgu.ac.uk*

Objective Structured Clinical Examinations (OSCEs) have been used for many years in undergraduate medical education since Harden and Gleeson first described their use in 1979. However, the use of this assessment tool in undergraduate pharmacy education is limited. This method of assessment has been adopted and developed for assessing pharmacy practice and clinical skills in the final year of the M.Pharm. (Honours) course at The Robert Gordon University School of Pharmacy.

The OSCEs are an element of the assessment of a module entitled "Specialised Care Provision". The module aims to build on the students' existing knowledge by applying the principles of pharmaceutical care to groups of patients with particular specialised needs. Examples of groups include the elderly, patients with renal impairment, the terminally ill and those on TPN and cytotoxics. The learning outcomes for the module are that students will be able to identify and evaluate the particular problems associated with certain patient groups, formulate ways in which the pharmacist can provide care for these patients and apply the relevant professional skills required.

The OSCEs are used to assess skills of evaluating patient specific problems, methods of providing specialised patient care and competency in relevant professional skills. Throughout the module the students are encouraged to build up a resource portfolio from teaching materials and directed study including Internet references. They are allowed to refer to any of these materials during the assessment. An OSCE involves examinees rotating around a circuit of stations at which they are required to perform a variety of tasks. At RGU the assessment consists of a cycle of five tasks, each lasting 6 min. There is a formative OSCE half way through the module with a summative OSCE at the end that contributes 28% of the final module mark. The five assessments are usually made up of two oral scenarios and three written tasks. Examples of oral assessments are setting up and counselling on the use of a syringe driver, nebuliser or oxygen set. Written assessments involve information retrieval and problem solving on topics such as dosing in the elderly, calculation of TPN fluid requirements and cytotoxic doses. The students are also required to identify specific pharmaceutical care issues from patient case notes during the 6-min period.

The competency of the students is measured using checklists for the oral scenarios and objective questions are applied in the written tasks. The assessments have been matched to individual subject learning outcomes, moderated internally and externally and piloted to ensure validity. Newble and Swanson (1988) stated, in work exploring the reliability of OSCEs, that using a single assessor at each station increases the reliability of the assessment and we have attempted to ensure that we have applied this principle.

The students find the assessments stressful but can see clearly the purpose of the exercise. Graduates who are now completing their pre-registration year have commented that although they found the OSCEs highly stressful, they now appreciate the enormous benefit they have derived from the experience. This method of assessment involves a major commitment of staff resources in terms of both the assessment procedure as well as administration. We feel however that this commitment is justified as the OSCEs simulate a realistic environment in which to assess the students and make a significant contribution to preparing our students for practice.

References

Harden, R.M. and Gleeson, F.A. (1979) "Assessment of clinical competence using an objective structured clinical examination (OSCE)", *Med. Educ.* **13**, 41–54.

Newble, D.I. and Swanson, D.B. (1988) "Psychometric characteristics of the objective structured clinical examination", *Med. Educ.* **22**, 325–334.

Student Assessment During an Industrial Training Day

FRIDRUN PODCZECK[a,*], VIV WITCHELL[b], SUE WARD[b] and SCOTT SMITH[b]

[a]*The School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, UK;* [b]*Aventis Pharma, Dagenham, UK*

**Email: fridrun.podczeck@ulsop.ac.uk*

One of the option courses in the 4th year of the M.Pharm. degree course at the School of Pharmacy, University of London is entitled "Dosage Form Design and Manufacture." This is a specialist course aiming at students interested in an industrial career. At the end of the course, the students will be able to describe operational and in-process control procedures, as well as the physical characteristics and characterisation methods of a wide range of pharmaceutical dosage forms. Students will thus appreciate that the products, which are dispensed, are manufactured by processes that ensure that they contain the correct amount of the stated drugs in a stable and bioavailable form.

During the course the students have to attend two industrial training days, one at Aventis Pharma and the other at IVAX Pharmaceuticals. Student visits of industrial manufacturing sites, however, are often stigmatised as a "just walk in and be bored" event, and hence in the past were not very popular by either students or the industrial staff. Indeed, often such visits were restricted to the students walking through a manufacturing area for one or two hours with explanation as to what they were shown, but with little chance for feedback, questions and in-depth experience. In this course, we have developed an interactive training and assessment programme, in which the students undertake tasks to explore strategic development issues, formulation, GMP and validation issues on practical examples.

In particular, the poster will describe the training day at Aventis Pharma; the on-site assessments and the exercises students have to undertake associated with the day will be presented.

The industrial training day at Aventis Pharma has become a valuable and, by the students, highly rated part of the course, which has mutual benefits for both partners.

The Use of Digital Video to Support Extemporaneous Skills in Pharmacy Practice

C.A. LANGLEY*, D. BELCHER, J.F. MARRIOTT and K.A. WILSON

Pharmacy Practice Group, Aston University, Aston Triangle, Birmingham B4 7ET, UK

**Email: langleca@aston.ac.uk*

INTRODUCTION

The first year of the Pharmacy Practice course at Aston University focuses upon the manipulative aspects of extemporaneous dispensing, both as a means of instilling core pharmaceutical skills and as a way of developing structured individual working. Our teaching ethos is to maintain this direction although growing student numbers, variable practitioner skills and time/resource constraints present challenges to the development of this ideal. We have introduced a virtual learning environment to support teaching on the M.Pharm. course. This abstract describes the development of digitally based videos to support the extemporaneous Pharmacy Practice course.

METHOD

Seven generic extemporaneous techniques were identified at teaching group consultative sessions. Prospective scene-by-scene video storyboards were then developed and reviewed within the group. Following revision, video shooting orders were allocated; these orders did not necessarily follow a logical dispensing sequence, but reflected the spectrum of visual images in the final video.

Sequences were shot digitally using a Canon MV300i and recorded digitally on a Mac G4 Cube running MacOS 9.2. Scene recording, editing and sequence construction was undertaken by Pharmacy Practice staff using Imovie 2.0.1. Completed video sequences were exported as Quicktime files to a PC for the addition of sound, which was recorded and edited digitally using Goldwave 4.25. The video and sound were then combined using Adobe Premiere 6.1. Final editions were reviewed at a Pharmacy Practice group consultative session, prior to final editing and export to compact disc in both Windows Media Player (.wmv) and RealVideo (.rm) formats.

RESULTS

The videos have replaced traditional class demonstrations using dual screen projection facilities. Undergraduates have unrestricted access to edited clips available on a student PC based intranet learning platform (WebCT) for student self-learning and revision. Within our teaching system involving 150 undergraduate students, we have achieved a saving in excess of 20 h of demonstrator time and the associated cost of materials.

DISCUSSION

A full evaluation of student results and attitudes to electronic support for extemporaneous dispensing will be available in June 2002. Anecdotally, students are enthusiastic about their experiences on practical classes and the ability to revise and confirm techniques at will. The development of a video package for extemporaneous dispensing has (1) achieved resource savings in terms of both staff time and consumables, (2) imposed longitudinal continuity of style between sequential classes, (3) enabled lateral conformity of technique, eliminating differences between practitioner styles and experience, (4) has improved the visual experience within the class and (5) provided a reproducible revision aid of unlimited availability with the option for additional on-line support.

Do Students Perceive that Specialist Language and Jargon within the Undergraduate M.Pharm. Degree Course Detracts from their Studies?

C.A. LANGLEY*, D. BELCHER, J.F. MARRIOTT and K.A. WILSON

Pharmacy Practice Group, Aston University, Aston Triangle, Birmingham B4 7ET, UK

**Email: langleca@aston.ac.uk*

INTRODUCTION

The M.Pharm. course contains a broad base of scientific and professional subjects, all of which embrace their own unique set of specialist terminology and jargon that are not routinely used in common language. A local scheme to encourage the widening participation of diverse student groups in Higher Education highlighted general difficulties that might arise through use of specialist language and jargon. Indeed, such difficulties might be experienced by traditional student groups unless they have had prior exposure to a pharmaceutical environment. The aim of this study was to explore the views of all M.Pharm. students at Aston University about the effect of specialist language and jargon upon their teaching and learning experiences.

METHOD

All students ($n = 448$) from the M.Pharm. undergraduate programme were surveyed in 2001 using a self-completion questionnaire containing 37 questions of mixed format including open, closed and scaled responses. The areas covered included general demographics, social background, qualifications, exposure to scientific and professional backgrounds, knowledge of selected jargon, perception of the impact of terminology in their learning experience and coping techniques.

RESULTS

The response rate was 100%. The vast majority of students (90.6%) claimed that specialist language or

jargon did not or only occasionally caused a problem in understanding course material. By contrast, a minority (0.9%) indicated that they experienced a large amount of difficulty. However, 23.5% of students indicated that specialist language adversely affected their learning experience. A number of potential solutions were forwarded, which included lecturer explanation (38.1%), in-house glossaries (36.6%), avoiding jargon (5.7%) and provision of extra classes (4.1%). Differences were detected in the perceived difficulty of understanding specialist language used in different parts of the course. Not surprisingly, the perceived adverse impact of specialist language lessened with progression through the course. No particular student group appeared to be better equipped to overcome the perceived teaching and learning difficulties caused by specialist language and jargon. Year one M.Pharm. students rapidly embraced the use of jargon when asked to provide six explanations of technical terms in plain English, with 18.6% of answers including jargon. Similar levels of jargon were used by the other three years of the M.Pharm. course (overall average 16.3%).

DISCUSSION

The study does not support the thesis that specialist language or jargon produced an adverse effect upon students' learning. Indeed, evidence was accrued indicating that M.Pharm. students rapidly adopt the use of specialist language and jargon themselves, which might be detrimental when communicating in their future professional roles.

Application of "Exocharmic" Demonstrations in Pharmaceutics Lectures

Y. PERRIE* and C. WHITTINGHAM

Aston University, UK

**Email: yvonne.perrie@btclick.com*

INTRODUCTION

In response to student feedback, an attempt was made to revise a 20-h second-year lecture course on liquid dispersed systems. It aimed to enhance student involvement and learning via active learning techniques. Quizzes and demonstrations were used to break the traditional 1 h lecture into shorter segments.

METHODS

Using several sources (e.g. Race, 1999; Fry *et al.*, 1999) attempts were made to create an interactive learning forum applicable to large groups (approximately 120 students). Throughout the lecture course, demonstrations were attempted to help increase motivation and aid learning (Bodner, 2001). A feedback questionnaire was constructed from suggestions gathered from various sources (Race, 1999; Fry *et al.*, 1999) and quantitative data on the student perception of the course was collected using structured statements. Qualitative data was obtained via open questions and peer review.

Lecture-based demonstrations were designed using Bodner's suggestions (Ruenitz, 2000). They contained an element of surprise and were memorable. In the light of these characteristics, Bodner noted that such demonstrations are exocharmic—i.e. they "exude charm" (Bodner, 2001). Demonstrations suited to lecture theatres included sedimenting suspensions, solubilisation of dyes, reduction of surface tension using surfactants etc.

RESULTS AND DISCUSSION

Overall response, obtained via the questionnaire, was positive, with over 79% agreeing the demonstrations were useful. It is hoped that by using such techniques, motivation to attend lectures and to interact during them is raised and both are seen as key factors in learning. Research at the University of Georgia College of Pharmacy, Athens (Ruenitz, 2000) shows that final exam performance of students who attended class regularly was 9% higher than that of students who attended infrequently.

Performance in the final exam after the course was monitored. In four multiple-choice questions, between 74 and 96% of students selected the correct option. In two short-answer questions the averages were 62 and 89% and answers displayed a high level of understanding. These results seem to correlate well with the degree of satisfaction expressed to both learning methods and lecture format. However, it is difficult to assess if the exam results indicate improved learning during the course, as other factors influence exam performance.

CONCLUSIONS

The encouraging feedback and the promising exam performance justify committing time and funds to improving the demonstrations and increasing their use.

References

Bodner, G.M. (2001) "Why Lecture Demonstrations are 'Exocharmic' for both students and their instructors", *J. Chem. Ed.* **5**, 31–35.

Fry, H., Ketteridge, S. and Marshall, S. (1999) *A Handbook for Teaching and Learning in Higher Education-Enhancing Academic Practice* (Kogan Page, London).

Race, P., ed, (1999) *2000 Tips for Lecturers* (Kogan Page, London).

Ruenitz, P.C. (2000) "Large Class Student-Centred Pharmaceutical Science Instruction: Is Classroom Attendance Necessary? Does Performance Affect Course Assessment?", *J. Pharm. Teaching* **8**, 3–18.

One Approach to the Introduction and Assessment of Problem-based Learning (PBL) into a Level 3 M.Pharm. Module at Liverpool John Moores University

DAVID ARMSTRONG* and DAVID MOTTRAM

School of Pharmacy, Liverpool John Moores University, Byrom Street, Liverpool L3 3AF, UK

**Email: d.j.armstrong@livjm.ac.uk*

BACKGROUND AND DELIVERY

In 2001–2002, problem-based learning (PBL) was introduced into Cardiovascular Therapy, a core Module in level 3 of the M.Pharm. programme at LJMU.

The year cohort ($n = 105$) was divided into 21 groups, each of 5 students. Students were allocated to groups, they did not chose their colleagues. They were told of the subject area to be covered (Coronary Heart Disease) but each group was given the freedom to define their own focus or interest. The PBL activity comprised 4 tutorials (3 compulsory and 1 voluntary) and 1 seminar which were undertaken over a total of 8 weeks. Two tutors were present both as facilitators and assessors at each PBL event.

ASSESSMENT

Groups were assessed at tutorials 1, 2 and 4 for the content and evidence-base which was principally through reference sources. The culmination of their PBL activity was the presentation of a seminar, prepared using Powerpoint™. Groups were also required, at the time of the seminar, to submit a Powerpoint™ report of their presentation. This was for distribution to their peers within the cohort. Potentially, at the end of their PBL, each member of a group would have an identical mark which might not accurately reflect their relative contributions to either the formally time-tabled events or to the group activities of research, collation, preparation and delivery of the seminar. Our approach to individualisation of marks within groups comprised two elements. First, students were warned in advance that they would only obtain a mark for a tutorial or seminar if they were present. This was achieved by multiplying their group mark by either 1 or 0 depending upon whether they were present or absent at that particular event. Second, at the time of the seminar, all students were assessed by their peers within their group. Guidance was given to the cohort about objective criteria which they might use to score their colleagues out of a maximum of 10. Since there were 5 students in each group,

individuals could score a maximum of 40. Each individual's final PBL mark was then calculated by multiplying their PBL mark, after correction for absence from time-tabled events, by their peer assessment mark, expressed as a decimal.

The Powerpoint™ reports ($n = 21$) were distributed to the cohort for peer group learning and for revision. The format of the end of Module examination included 20 multiple choice questions (MCQs) based upon the reports generated by PBL. This contributed 20% to the examination mark which in turn contributed 70% to the Module mark. Student performance in the PBL-based Section of the examination did not differ significantly from their performance in the 4 short essay questions which comprised the remainder of the examination and related to material delivered didactically.

CONCLUSION

Student involvement in and commitment to PBL was most encouraging. We intend to increase the use of PBL within the Module by broadening the subject material covered and gradually changing the emphasis from formal didactic teaching to PBL for primary delivery of syllabus content. Whilst this is, perhaps, more intellectually demanding of staff than traditional methods of delivery, it is in our opinion, more rewarding for staff and provides considerable educational benefits for the students.

Do Entry Qualifications Predict the Performance of Stage 1 Pharmacy Students in Assessment?

R.W. JONES, E. LAWRENCE and P. RUTTER*

School of Pharmacy and Biomedical Science, St Michael's Building, White Swan Road, Portsmouth PO1 2DT, UK

**Email: paul.rutter@port.ac.uk*

There has been concern about the high proportion of students on the M.Pharm. degree pathway who have to sit referral examinations. There is anecdotal evidence that this might arise due to students entering the course with low A level grades, with non-science A levels or by routes allowing university entry without A levels, a miscellaneous group including those from overseas and those having completed courses in Further and Higher Education. Consequently a study of the influence of entry qualifications on student performance in assessment in Year 1 was undertaken.

A comparison of mean mark for year 1 with A level entry grades showed no correlation for either the 1999 or 2000 intake. Furthermore there was no significant difference between the average mark of students with three science A levels and those with non-science A-levels, nor those who entered without any A levels. Comparison of the Year 1 results for this cohort and the 1999 cohort, who were not interviewed, showed no significant difference. All these data showed no effect of entry qualifications on the average first year mark.

A different picture semerges when the number of referrals and repeats is considered. Any unit failed at the end of semester can be redeemed by referral in the summer. A second failure requires the whole unit to be repeated with attendance. Results for the year 2000 cohort intake are shown in Table I.

TABLE I Comparison of entry qualifications and number of referrals and repeats

A level points	No. Students	No. Students referred	% Students referred	No. units referred	No. students repeating	No. units repeated
30	1	0	0	0	0	0
25–26	7	2	29	2	0	0
24	15	5	33	8	0	0
22	25	12	48	18	1	1
20	24	14	58	31	2	7
18	28	9	32	15	3	3
15–16	7	4	57	8	1	1
Non A level route	30	14	47	30	3	10

These data show a problem with students without A levels, with this group showing the highest number of students being referred in or repeating at least one unit. A more detailed breakdown of this group is required. It also needs to be determined if this occurs in other years.

One of the difficulties with such an analysis is the fact that many other variables may be involved, such as the Examination Board, type of institution in which A levels were taken and whether the student entered through clearing.

It is anticipated that the findings will inform admissions policy and student support and teaching strategy. It must be stressed that over 50% of the students without A levels did progress to year 2 without the need for referrals and experience has shown that there are some excellent students in this category. The School is very keen to recruit students *via* this route and such prospective students are now being interviewed to assess knowledge of Chemistry, Biology and English prior to an offer being made.

Validation of Assessment Tools for Accreditation of Prior Learning (APL) of Clinical Pharmacy Knowledge and Skills

A.M. WATSON[a,*], M.C. BENNIE[b] and E. MCQUEENEY[c]

[a]*Greater Glasgow Pharmacy Practice Unit, South Glasgow University Hospitals NHS Trust, Department of Pharmaceutical Sciences, University of Strathclyde, Glasgow, UK;* [b]*Lothian Pharmacy Practice Unit, Lothian University Hospitals NHS Trust, Department of Pharmaceutical Sciences, University of Strathclyde, Glasgow, UK;* [c]*Scottish School of Further Education, University of Strathclyde, Glasgow, UK*

**Email: a.watson@strath.ac.uk*

OBJECTIVES

To define the essential clinical pharmacy knowledge and skills required to complete Module 1 (Clinical Induction) of a postgraduate Masters in Clinical Pharmacy for Accreditation of Prior Learning (APL); to design valid and reliable tools as appropriate; to assess a student cohort before and after attendance at Module 1; to examine outcomes and benefits of Module 1 attendance.

STUDY DESIGN

Literature evaluation, documentary evidence, focus groups and postal questionnaires were used to support the definition of clinical knowledge and skills; and development of 4 assessment tools (Clinical knowledge; Case summary; Care planning and Oral presentation) in the absence of any published tools. Quantitative data was generated for 20 students (Group A) for pre and post Module 1 assessments. Validity was determined by peer review and comparison of students *with* and *without* prior clinical training (Group B [$n = 11$] and C [$n = 9$] respectively). Inter-rater reliability was determined for independent rater decisions on "exemption" suitability using the 4 tools developed. Additional benefits of attendance at Module 1 was determined through pre and post test data together with student and manager feedback.

RESULTS

Face validity was achieved and construct validity demonstrated (Wilcoxon Rank Sum Test, comparing Groups B and C): Clinical knowledge ($p < 0.01$); Case Summary ($p < 0.01$); Care planning ($p < 0.01$) and Oral presentation ($p < 0.05$). The Kappa coefficient (k) for inter-rater reliability demonstrated the following: Case summary "Good", $k = 0.76$; Care planning "Very good", $k = 0.84$; Oral presentation "Moderate", $k = 0.48$. Attendance at Module 1 was beneficial (Wilcoxon Signed Rank Test) in Group C ($p = 0.01$), but not in Group B ($p > 0.05$). Qualitative data revealed that Senior pharmacists felt that APL would prevent training repetition and formalise assessment, but students were concerned about the effects of APL and non-attendance on the development of group dynamics.

CONCLUSION

Construct validity and inter-rater reliability were clearly demonstrated for Clinical knowledge, Case summary and Care planning, but weaker for the Oral presentation tool. The results have been used to introduce a formal APL system using the valid and reliable tools.