Chapter 1

Introduction

1.1 Reflection on title

The subject of students’ attendance, or non-attendance, at lectures is a frequent topic of conversation amongst academic staff in the Pharmacy Practice Division of the School of Pharmacy and Biomedical Science (BMS) at the University of Portsmouth. Lecturers return from lectures and comment to colleagues that the lecture theatre was only half full, or they estimate that only a third, or perhaps two thirds of students were there. The experience of addressing a full student cohort in a lecture invokes surprise and joy, rather than being the expected norm. This situation is in stark contrast to practical classes, where absenteeism is unusual.

The issue of poor levels of attendance at lectures is similarly raised at many meetings, where it becomes clear that lecturers in other subjects on the Master of Pharmacy (MPharm) course have a similar problem.

Or is it a problem? I have witnessed this question informally discussed on many occasions. Opinions voiced vary widely, from the assertion (usually unsupported by evidence) that poor attendance at lectures inevitably leads to poor performance in assessments, to the attitude that students are adults who can decide for themselves whether to attend lectures or not and may choose to use other means of achieving the same learning.

The continuing and unresolved debate over this matter is what led me to this research.

1.2 Changes in the profession of pharmacy

1.2.1 The demand for pharmacists

The demand for pharmacists has increased substantially over the last 10 years, due to a number of factors. Changes in the public’s expectations with regard to accessing services has resulted in community pharmacies opening for longer hours (up to 100 hours per week) and an increase in the number of pharmacy outlets. The number of prescribed items has
increased by over 50% during the last decade and there has been an increase in the number and complexity of services provided in community pharmacies, such as medicines use reviews, minor ailment services and smoking cessation schemes. There has also been an increase in the number of National Health Service (NHS) establishments and a consequent increased demand for hospital pharmacists. As a result of all these changes, even though, as described below, the number of pharmacy students has more than doubled over the same period, there has continued to be reports of shortages of pharmacists.

1.2.2 Evolving roles for pharmacists

As well as the additional and enhanced pharmaceutical services, such as those mentioned above, that have already been introduced over the last decade, it is believed that future pharmacists will face further challenges in delivering healthcare services. Due to increased life expectancy and low birth rates, it is estimated that 50% of the population will be over 50 years of age by 2024. Older people tend to use more medicines than the general population and it is likely that more people will be treated simultaneously for 2 or more medical conditions, increasing the need for pharmacists to have expert knowledge of potential medicine interactions and an enhanced awareness of issues of patient safety. Anticipated advances in pharmacogenomics and molecular biology will change the way medicines are used, allowing them to be tailored to the genetic profile of individuals. Such changes will require pharmacists of the future to be able to combine scientific training and clinical and communication skills to work with other healthcare professionals and patients, beyond the current requirement, to optimise the safe and effective use of medicines.

Pharmacists of the future will work within a new NHS structure. Through recent NHS and public health white papers (Department of Health, 2010a and 2010b), the government has set out its vision of the delivery of healthcare in the 21st century. As part of the proposed changes, strategic health authorities and primary care trusts will be abolished and the government has made clear its intentions to put clinicians in the driving seat, to set hospitals and providers free to innovate and to provide stronger incentives to adopt best practice, all of which may present fresh challenges to pharmacists. (Smith & Darracott, 2011).

1.2.3 Formation of the General Pharmaceutical Council

Prior to September 2010, the Royal Pharmaceutical Society of Great Britain (RPSGB) acted as both regulator and leadership body for pharmacists in Great Britain, a situation at odds with other healthcare professions, which are regulated by independent regulators. The
government made the decision, therefore, to establish the General Pharmaceutical Council (GPhC), to regulate pharmacists, pharmacy technicians and registered pharmacy premises, with a separate organisation, the Royal Pharmaceutical Society, acting as the leadership body for pharmacists.

1.2.4 Role of the General Pharmaceutical Council

It is the GPhC’s job to protect, promote and maintain the health, safety and wellbeing of patients and of those who use pharmaceutical services. In order to ensure that registrants practise safely and effectively and to inform decisions about registrants’ fitness to practise, the GPhC publishes standards for education and training, continuing professional development (CPD) and the conduct, ethics and performance of pharmacists.

1.2.4.1 Code of conduct, ethics and performance for pharmacists

The standards of the code of conduct, ethics and performance for pharmacists are represented by the 7 principles outlined below:

As a pharmacy professional you must:

1. Make patients your first concern

2. Use your professional judgement in the interest of patients and the public

3. Show respect for others

4. Encourage patients and the public to participate in decisions about their care

5. Develop your professional knowledge and competence

6. Be honest and trustworthy

7. Take responsibility for your working practices. (GPhC, 2010).

1.2.4.2 Code of conduct for pharmacy students

The code of conduct, ethics and performance for pharmacists did not previously apply to pharmacy students but, in September 2010, the GPhC published a ‘Code of Conduct for Pharmacy Students’, in line with the standards of conduct for pharmacists and based on the same 7 principles, outlined above. This code of conduct applies to students for the entirety of their course and requires them to act professionally at all times. Principle 7 of the code
requires students to plan and use their time effectively, to attend classes, to conduct themselves appropriately and to be punctual.

In November 2010, the GPhC issued a draft document for consultation with Schools of Pharmacy (SoPs), entitled, ‘Future pharmacists – standards for the initial education and training of pharmacists’. Within this document is a requirement that SoPs have systems and structures in place to manage the learning of students in the academic environment which take account of student attendance, particularly minimum requirements and what is compulsory. Whilst this document is still to be published in its final form, it appears that SoPs will be required to make required levels of attendance at teaching sessions clear to students. Furthermore, it is stated in the ‘Code of Conduct for Pharmacy Students’ that it is a requirement for SoPs to have in place fitness to practise procedures to which students may be subjected, should they not abide by the principles of the code.

1.3 Changes in Higher Education

1.3.1 From an elitist to a mass higher education system

The modern sense of western universities has been based on their foundations as seats of teaching and searching for truth, where students were exposed to the best thinking and knowledge in the world and traditionally, higher education (HE) was seen as an elitist university sector for a minority of academically successful young people. The rapid economic, technological and social changes of the late 20th and early 21st centuries however, have been reflected in changes in HE. Knowledge is now seen by governments as a crucial factor in gaining competitive advantage in a global economy, with education and training a central part of economic policy-making. The belief that there is a limited pool of talent in a society is no longer acceptable and there is an emerging consensus that all, rather than an elite few, are capable of significant practical and academic achievement. (Bathmaker, 2003).

The first significant increase in participation in HE took place following the Committee on Higher Education’s 1963 report, known as the Robbins report. The Robbins report challenged the access to HE of a small elite element of the population as being unsuited to the emerging needs of the post-war vision of increased social mobility and equality, and committed to make places available in HE for all who were qualified to pursue such a course and wished to do so. As a result, the number of students in the UK approximately doubled between 1963 and 1970. Reductions in government spending then led to a levelling off of numbers until the late 1980s. In 1989, the then Secretary of State for Education, Kenneth
Baker, called for student numbers to increase again and by 1992, numbers of students had risen from about 17% of school leavers to 30%, although most of the increase was in students attending polytechnics and colleges of HE, rather than universities. Further restrictions on funding meant that numbers remained at about 33% until the end of the 1990s. (Bathmaker, 2003). The Dearing report of 1997 predicted that participation in HE could be expected to increase to 45% over the following 20 years (Laurillard, 2000) and in 2001, the Labour government set a target of 50% participation by 2010, although this figure included young people aged 18-30, rather than just school leavers.

1.3.2 Widening participation in higher education

In 2003, the government published a document entitled, ‘Widening participation in higher education’ in which it set out its intention to help more people from under-represented groups, particularly low socio-economic groups, to participate successfully in higher education. In December 2006, a Department for Education progress document, also called ‘Widening participation in higher education’ revealed that gradual progress had been made in broadening the socio-economic make-up of the student population. At that time, although the government acknowledged that there was a lack of robust data to enable them to compare the make-up of the student population with the general population, and so measure progress in widening participation reliably, it was considered that progress was too slow and appeared to be levelling off. (Department for Education, 2006). Nevertheless, it is clear that student numbers in institutions of higher education have increased significantly, albeit in fits and starts, over the last 40-50 years and that students in higher education are from a wider range of socio-economic and cultural backgrounds than ever before.

1.3.3 The role of the university lecturer

Thompson (1997) summarised the changes that had occurred in HE by the late 1990s and several of these continue to impact on the development of HE today and the role of the university lecturer. The worldwide revolution over the last 20 years that has seen the promotion of HE, often for economic and commercial reasons, has led to more students undertaking HE to improve their employment prospects, rather than for enjoyment. The larger and more diverse student population resulting from widening participation and a move from an elitist to a mass system has not been accompanied by a proportional increase in resources, leading to university lecturers teaching larger numbers of students in larger class sizes. The scope of educational delivery has been widened however, by the use of new
technologies and an increase in off-campus learning. Additionally, in a rapidly-evolving world, with a workforce needing to change constantly to keep up with technological advances, there is a growing emphasis on the need for lifelong learning and the role of the educator has evolved to be less about simply teaching and more about showing students how to learn.

1.4 Teaching methods in higher education

Teaching in universities is often divided according to the number of students in the group, into large group teaching and small group teaching. So what is meant by a large group? As Race (2005) says, for many staff in HE, groups numbered in the hundreds are not unusual, whilst others regard 80 students as a large group. In HE however, the term ‘large group’ is most commonly employed to describe students in a lecture theatre, be they 10s or 100s, being taught by means of a lecture. Lectures will be discussed in more detail later.

Other teaching methods, used with smaller groups of students, include tutorials, seminars and practical classes, such as lab classes and workshops.

1.4.1 Tutorials

Tutorials are described by Wallace, Schirato and Bright (1999) as being more open-ended and interactive than lectures, allowing for student participation. Their purpose is described as helping students to review and consolidate knowledge gained from lectures, by activities such as informal discussion, debate, talking in sub-groups, and question and answer sessions. Their advantage is seen as facilitating understanding and recall of information.

Tutorials are usually categorised as a ‘small group’ teaching method and Race (2001) suggests that traditionally, a tutorial was conducted with only one to 5 students, although larger numbers may be present due to current the larger student cohorts now seen in universities. Like Wallace, Schirato and Bright (1999), Race (2001) sees tutorials helping students digest and make sense of concepts taught elsewhere, such as during lectures. He lists further roles of tutorials as being to allow students to practise applying knowledge, to increase their confidence and to allow exchange of feedback.

1.4.2 Seminars

Both Race (2005) and Griffiths (2009) suggest that the terms ‘seminars’ and ‘tutorials’ are frequently confused or used interchangeably. Race (2005) explains that the essential difference between the 2 is that in seminars, students themselves contribute most of the
content and may prepare talks about pre-allocated topics, either individually or in subgroups, and lead discussion on topics, whilst Griffiths (2009) prefers to use the more generic term ‘group discussion’, rather than attempt to identify the differences.

1.4.3 Laboratory classes

Wallace, Schirato and Bright (1999) describe the purposes of laboratory classes in a science-based subject (such as pharmacy) as introducing students to the practices, technologies and conventions of scientific disciplines and providing the opportunity to learn how to collect, organise and record data, often as part of a team. McMillan and Weyers (2006) add to this list the analysis of data, hands-on experience of using laboratory equipment and experience of writing up work in an appropriate format. Whilst laboratory classes are intended to replicate the conditions, activities, procedures and results of scientific work, Wallace, Schirato and Bright (1999) point out that they may appear artificial as everything is pre-organised and students often work towards a pre-arranged result within a specified time limit. Nevertheless, the authors believe, lab classes do allow students to link theory to practice, gain experience in scientific practice and offer experience of team working.

1.4.4 Workshops

According to Bowner and Flowers (1997), the term ‘workshop’ implies application and use and workshops provide students with practice and hands-on experience. Unlike laboratory classes that are associated with science-based disciplines, workshops can be used to develop the information and ideas delivered by other means, such as lectures, on a broad range of subjects.

1.4.5 Other methods of small group teaching

Methods of teaching that may be termed ‘small group teaching’ and listed by Griffiths (2009), include brainstorming, buzz groups, cross-over groups, free discussion, peer tutoring, self-help groups, role-play and tutorless groups. She points out that several of these, as well as case studies and demonstrations, are approaches that can be incorporated into both large and small group teaching sessions. As an example, workshops may include brainstorming, discussion and role play, and buzz groups can be used during lectures.

Griffiths (2009) describes how, in recent years, small group teaching has come under threat due to the expansion of HE and the consequent increases in class sizes. Like Thompson (1997), she perceives the increased diversity of student backgrounds as leading to lecturers
being responsible not only for what is taught but also how students learn, and believes small group teaching is a means of fostering student engagement, and cooperative and collaborative learning.

1.5 The use of technology in higher education

Brenton (2009) discusses the meaning of ‘e-learning’, the term he uses to describe what happens when students learn using information and communications technology. E-learning, Brenton (2009) purports, can happen on or off campus, can be employed in a variety of teaching approaches and is not something delivered to students, but rather, something teachers enable students to do.

Selinger (2000) highlights ways in which text-based, electronic, computer-mediated communications can be used to enhance teaching and learning opportunities. She points out that technologies such as television broadcasts, and audio and visual material, long-employed in distance learning institutions, and now joined by web-based teaching and communication via electronic text or video, are being adopted by all educational establishments. Selinger (2000) believes that such technologies increase the opportunities for students to decide how and when they learn and to enhance reading by accompanying on-line discussion and debate with others. ‘Learning communities’ are no longer confined to a physical location and students can learn with others anywhere in the world. Other uses of technology cited by Selinger (2000) include facilitating collaborative projects, setting group assignments and providing tutors with paperless access to students whether they are on campus or not. She believes that technology can facilitate wider participation, as some students are more articulate in an electronic discussion forum than in class. Another use of technology suggested by Selinger (2000) is to increase students’ access to experts, who can participate in guest discussions, without physically attending the institution. Overall, the author views the introduction of electronic communications as enhancing and extending teaching and increasing the opportunities for learning opportunities to be shared.

Brenton describes the use of virtual learning environments (VLEs), now present in the majority of HE institutions. Such e-learning platforms frequently include features such as a chat room, a discussion board, a calendar, an announcement feature, a tool for building on-line assessments, a function for setting work, for students to submit it and for lecturers to assess it, provision for uploading various learning materials and making web links, and ways
of tracking students’ activities on the VLE. The VLE in use at the University of Portsmouth at the time of writing this thesis is known as Victory.

As Brenton (2009) says, VLEs can be used in a variety of ways to enhance teaching and learning. Some of his suggestions are the use of podcasts to increase or enhance the material covered in a lecture, using the discussion forum in place of a traditional seminar, students researching the background to a topic and posting their findings on the VLE for others to comment upon, using on-line tests to ensure students keep up with reading, and helping students organise their learning by means of e-portfolios.

Brenton (2009) cautions that e-learning has to be incorporated into the design of a course, rather than being considered just an extension of it and that it is important for lecturers to consider the purpose of any ‘e-solution’ before embarking on it. As he says, solving a problem that does not exist will lead to underuse of the e-learning resource. Brenton (2009) also points out that, although a decade ago, it was believed that education would be revolutionised by electronic media and large-scale, distance-learning programmes, the focus is returning to what constitutes good teaching and encourages successful learning and the role of the teacher is the most important element in student learning.

1.6 Pharmacy education

1.6.1 The current situation

As there is currently no limit on the number of pharmacy students, the increased demand for pharmacists, described above, resulted in established SoPs increasing their student intake and universities opening new SoPs, with an increase from 12 SoPs in England in 1999, to 21 in 2009 and a corresponding increase in pharmacy students over the same period from 4,200 to 9,800. (There are a further 4 SoPs in Wales, Scotland and Northern Ireland).

At present, pharmacy students undertake a 4-year undergraduate masters degree (MPharm) at a SoP, followed by a separate, work-based, pre-registration training year, most commonly in a community or hospital pharmacy. The student achieves qualification as a registered pharmacist by the pre-registration training tutor confirming that the appropriate performance standards have been met and by passing the GPhC’s national registration exam. There is no tangible link between the MPharm delivered in SoPs and the pre-registration training, delivered in practice settings, with the 2 stages having entirely separate curricula, quality assurance arrangements and outcomes. Since pharmacy became a
graduate entry profession in 1967, there has been no significant change in the structure of education and training for pharmacists and no evaluation of its fitness for purpose against the requirements of modern practice. (Smith & Darracott, 2011).

1.6.2 Requirements for changes to pharmacy education

Following recruitment problems and organisational issues over the training of junior doctors in 2007, an independent inquiry was commissioned that resulted in a report entitled ‘Aspiring to Excellence’. This report proposed the concept of an independent, advisory, non-departmental public body with a remit to scrutinise and advise the Department of Health (DH) on national workforce planning, education and training for medicine, dentistry, pharmacy and healthcare science. The emergent body is called Medical Education England (MEE) and is intended to provide a coherent professional voice on education and training matters as they relate to the four professional groups outlined above.

In January 2011, the sub-committee of MEE devoted to pharmacy published a discussion paper called ‘Modernising Pharmacy Careers Programme’, (Smith & Darracott, 2011), a review of pharmacist undergraduate education and pre-registration training and proposals for their reform. The authors of the report predict that the enhanced future roles of pharmacists will require a level of skill in changing behaviour not supported by the current provision of pharmacy education and training, which has not changed substantially over the last 40 years. The piecemeal additions to MPharm courses, made as a result of individual SoPs’ attempts to incorporate more clinical skills and practice into their teaching, have led to inconsistencies across MPharm programmes and the authors believe that a strategic, coordinated approach to education and pre-registration training is needed if pharmacists are to contribute fully to future public health challenges and enable patients to gain maximum benefit from their medicines.

1.6.3 Suggested changes

The MEE discussion paper refers to difficulties described by employers and students, in linking the theoretical teaching of university to real situations in the work place during the pre-registration training year and subsequently, a situation the authors believe is due to the current structure that separates theory from practice, with students having limited, if any, access to patient-facing placements during their time at university. The authors propose, therefore, a single, 5-year period of teaching, learning and assessment that leads to graduation and registration as a pharmacist. Such a programme is used by other medical
professions, such as medicine and dentistry and for pharmacist training in the United States of America (USA) and would mean that students would focus, across all 5 years, on integrating knowledge and practice and so achieving success as a professional clinician as well as a scientist.

1.6.4 Impact on teaching and learning

The MEE acknowledges that its proposals for changes to pharmacy undergraduate education and training will require an expansion in the number of clinical staff involved in teaching, learning and assessment for pharmacy students and that planning and development of the workforce will be needed to deliver sufficient individuals with the necessary skills and competencies. The authors believe that such a clinical academic workforce is required to ensure that teaching for pharmacy students reflects actual practice. They purport that having practitioners closely involved in teaching leads to greater understanding on the part of students about engaging with real life issues and the purpose of being a pharmacist, and highlight that the principle of using clinical practitioners to teach students is well-established in other healthcare professions.

1.7 The transition from A levels to degree-style teaching

Although some students embark on a pharmacy degree with non-traditional qualifications, such as an Access courses or baccalaureate, the majority have studied A levels prior to commencing their university course. McMillan and Weyers (2006) list some of the differences between secondary school or A level college teaching and what students experience at university. They point out that class sizes in university can be as large as 300, compared to school classes of up to 30 or so and that attendance at lectures and other teaching sessions will not necessarily be mandatory or monitored at university as it is at school. Additionally, students will not be chased up at university to complete work or hand it in on time.

Most striking however, are the differences in teaching and learning strategies. The authors state that in school the student will have his learning presented, reinforced, consolidated, and revised in subsequent lessons, whereas, at university, there is much greater requirement for independent learning and less opportunity for dialogue with teachers. The learning and assessment requirements in school are portrayed by McMillan and Weyers (2006) as memorising information at a slow pace, with only single word or short answers required or repeating text word for word in assessments whereas, in university, the work
will be delivered at a rapid pace and the student will be required to think analytically and originally and demonstrate understanding in assessments. Additionally, McMillan and Weyers (2006) suggest that in school, little importance is attributed to spelling, punctuation and grammar whilst, in university, there may be penalties applied for poor written work. These differences suggest challenges both for students adapting their learning styles and techniques to the degree-style teaching and for teachers helping them in the transition.

1.8 Lectures

As mentioned above, when the term ‘large group’ teaching is used, it most commonly means a lecture. It is widely held that lecturing has been considered an economical way of teaching large numbers of students for many centuries, though opinions vary on when the practice began. McMullan (2008) refers to lectures being used in the time of the ancient Greeks, Brown (1978) points out that they were used 2,500 years ago and Sutherland, Badger and White (2002) state that lectures have been delivered to students since the first universities were formed in mediaeval times. Exley and Dennick, (2004) recount how scholars in the monasteries of Europe, before printed books were available, travelled hundreds of miles to listen to a monk at a lectern who would read out a book whilst the scholars copied it down word for word. Indeed, the terms ‘lecture’ and ‘lecturer’ are derived from the Latin *lectura*, meaning ‘to read aloud’.

Today, university teachers in British universities are still referred to as ‘lecturers’ and the large group lecture remains a standard on most university courses (Race & Pickford, 2007). The MPharm degree at the University of Portsmouth is no exception, in that students spend over 900 hours in lectures during their 4-year course, compared with less than 400 hours in total being taught via other teaching methods, such as laboratory and workshop sessions, seminars or tutorials. (University of Portsmouth, 2006).

1.8.1 Lectures as a method of teaching

Although traditionally seen as an opportunity for students to gain information and as a forum for sharing knowledge, the appropriateness of lectures as a teaching method has been the subject of research and debate for decades, (Mulligan & Kirkpatrick, 2000; Race & Pickford, 2007) and during the latter part of the 20th century, many universities moved away from lecturing to smaller group teaching. More recently, however, increases in university student numbers have resulted in a return to large group teaching and many academics
believe that lecturing is the only way such large student cohorts can be cost-effectively taught. In some cases, lecturers’ contact with students is entirely via large classes (Race & Pickford, 2007). As a result, considerable amounts of money have been spent by universities during the last decade, on refurbishing and updating lecture theatres. (Exley & Dennick, 2004).

Lecturing is often viewed as ‘passive learning’ and described as ‘didactic’, a term derived from the Greek, ‘didaskein’, meaning ‘to teach’. Exley and Dennick (2004) and Brown (1978) quote the anonymous definition of lecturing as “the transference of the notes of a lecturer to the notes of the student, without passing through the brains of either”. As long ago as 1971, Bligh commented that whilst a lecture was an effective teaching method for transmitting information, it was not as good as active methods for promotion of thought or changing students’ attitudes and that any teaching objectives other than transfer of information should be achieved via other teaching methods. Similarly, Exley and Dennick (2004) feel that traditional lectures offer few possibilities for feedback, student questions and the development of problem solving and higher order cognitive skills.

1.8.2 The purpose of a lecture
Brown (1978) described the purpose of a lecture as being threefold – giving information, generating understanding and creating interest. As he said, with no interest, students lose attention, so do not understand, and without information, there is nothing to be understood.

Charlton (2006) believes lectures to be the best method of teaching some kinds of knowledge - the essentials of what he terms “tough subjects”, such as natural science, medicine and law, whilst Challis, Robinson and Tholmlinson (2009) at the University of Sheffield see the lecture as the mainstay of their interaction with their students, setting their agenda and providing a major impetus for them to engage with the material.

The opinions of Exley and Dennick, (2004), Dent (2005), Newble and Cannon (1994), and Race and Pickford (2007) can be summarised to suggest several ways in which lectures can be successfully used.
Communicating enthusiasm for a topic is considered an important reason for giving lectures, because the lecturer can provide an overview of the course or a block of teaching, ‘painting the big picture’, so as to inspire students, or stimulate their interest and curiosity, something that cannot be achieved by independent learning.

Lecturers can impose a certain emphasis on material students will read, such as different points of view, relating the topic to others in the course, or exploring practical applications of ideas, so providing a structure or framework for the material.

Textbooks may not cover a topic in sufficient depth or at an appropriate level for students, or there may be no single external source that covers the subject, so the lecturer pulls together material from several sources and tailors it to students’ needs. Textbooks also become out of date quite quickly and lectures are an opportunity for lecturers to present the most up to date research and recent information to students.

Sometimes, other teaching formats that require the delivery of material several times to small numbers of students are unviable, due to issues of cost-effectiveness and time required.

As pointed out by Race and Pickford (2007), the internet, providing information on demand, has reduced the importance of the lecture in its traditional role as a primary means of conveying information and Newble and Cannon (1994) and Dent (2005) mention recurrent predictions that lecturing will be replaced by programmed learning, television, computers and problem-based learning.

Hunter and Tetley (1999) emphasise the need for lecturers to make clear to students the purpose of their lectures and why they are important. They found that many students they interviewed saw lectures as no more than a means of obtaining notes and entreat lecturers to explain to students what they expect them to do during the lecture and outside it, how the lecture relates to work in other teaching situations and ways in which they can enhance their learning.
1.8.3 How to lecture

Various authors (Bligh, 1971; Exley & Dennick, 2004; Newble & Cannon, 1994; Dent & Harden, 2005) consider the important elements of successful and effective lecturing. Their collective advice is that lecturers should be knowledgeable and enthusiastic about the topic, present material audibly, concisely and at an appropriate pace and ensure that the information presented is useful and relevant in terms of learning outcomes. They caution that lecturers should be well-organised, good planning, preparation, time management and logical presentation of material all being considered vital. An awareness of the needs of the students on the receiving end of lectures is also important. Lecturers should be aware of the level and stage of the students, adjusting lecture content and explanations accordingly. They should be able to provide explanations of complex concepts beyond those found in conventional textbooks. Lecturers should also be genuinely interested in students and their work and helpful with regard to potential misunderstandings that students might have.

On the subject of enthusiasm on the part of the lecturer, Bligh (1971) reports experimental evidence of lecturer enthusiasm improving the outcome of multiple choice tests (MCQs) and the level of audience recall of information provided during lectures. Race and Pickford (2007) and Barker (1998) add the caveat that whilst enthusiasm is infectious and closely related to inspiring students, lack of enthusiasm is infectious too and can de-motivate students.

Gross Davis (1993) suggests some strategies for lecturers to improve their delivery of lectures, which include videoing themselves, watching the video and consciously changing any undesirable behaviour, and not reading from notes. The latter, Gross Davis maintains, gives a student the impression that the lecturer is speaking to him/her as an individual.

1.8.4 The structure of a lecture

Exley and Dennick (2004) maintain that a lecture, like most stories, should have a beginning, a middle and an end. This can be thought of as tell them what you’re going to tell them (context or introduction), tell them (content or body) and finally, tell them what you’ve told them (closure or conclusion).

The context, or introduction, makes connections with other learning and provides a background to support the importance and relevance of the content, so priming and
preparing students to deal with the substantive content of the lecture. Gross Davis (1993) recommends outlining the structure of the lecture to the students, so they know what to expect and, should their attention wander during the lecture, they will more easily be able to find their place again.

Both Race and Pickford (2007) and Dent (2005) advise listing learning outcomes for the lecture, at the beginning, so that students have a clear picture of what they should have achieved by the end, allowing them to prepare their thoughts for what is to come. Newble and Cannon (1994) suggest a joke, anecdote or movie clip can be used to generate interest in what is to follow in the body of the lecture, but also warn against trying to engage students by the lecturer’s personality, rather than the subject matter.

Gross Davis (1993) advocates using the start of the lecture to grab the students’ attention by, for example, a provocative question, a startling statement, a powerful quotation or mention of a recent news event.

Exley and Dennick (2004) and Newble and Cannon (1994) recommend not being over-ambitious about the amount of content that can be covered in a single lecture. They maintain that the less a lecturer teaches, the more the students will understand and remember. Brown (1978) also asserts that a very common cause of forgetting is trying to learn too much and that it is a common fault of lecturers to try and teach too much.

Other recommendations by Exley and Dennick (2004) include varying the stimulus or pace, as students’ attention span dips after fifteen to twenty minutes, (a point also emphasised by Newble and Cannon (1994) and Gross Davis (1993)), judicious use of humour, structuring content logically and explaining concepts that may not be as obvious to students as to the lecturer.

It is recommended by both Exley and Dennick (2004) and Dent (2005) that the closure (or conclusion) should summarise the key points of the lecture, demonstrating how the learning outcomes, which Race and Pickford (2007) advise should be displayed again, have been achieved, and emphasising any conclusions. As Newble and Cannon (1994) point out, this section of a lecture is as important as the introduction because students are most likely to remember the last things a lecturer says.
In spite of the plethora of audio-visual aids and computer technology now available to lecturers, Exley and Dennick (2004) believe the lecturer’s voice is his most valuable communication tool. Recommendations made by Gross Davis (1993), Newble and Cannon (1994), Exley and Dennick (2004) and Dent (2005) about how to deliver a lecture include varying pitch and speed of speech as a monotonous, flat delivery will result in students becoming bored. They suggest not allowing volume and intonation to drop off at the end of sentences and using emphasis and pauses to stress important points. The same authors emphasise the need to use an appropriate pace of delivery, pausing periodically when necessary to allow for note-taking by students.

The position of a lecturer is also considered, advice being to face students when addressing them and maintain eye contact with them. Lecturers are recommended to consider moving away from the lectern when they wish to create a less formal relationship with students. The inclusion of anecdotes can impart variety to a lecture or be used to recapture dwindling student attention. Lecturers are warned not to dim lecture theatre lights too much as this may encourage students to go to sleep!

Dent (2005) further enlarges on the delivery of a lecture, considering where the lecturer will stand, or if he will move about, sensibly recommending that he ensures that he is close to the microphone and does not obstruct the audience’s view of his presentation. Gross Davis (1993) suggests using movements to emphasise important points or a change of topic.

Other recommendations, made by Gross Davis (1993) include talking to the audience, not the lecture notes, and using facial expressions to convey emotions.

### 1.8.5 Computing and information technology

Over recent years, there have been many advances in computing and information technology (IT) that have affected how lectures are delivered, what is included in them and how students are supported, including tools such as email, online lecture notes and reading lists, and PowerPoint presentations. (Exley & Dennick, 2004).

Other technologies, increasingly used to enhance lectures, include the use of internet resources during lectures, video conferencing and virtual learning environments (VLEs) such as Blackboard, WebCT or, as at the University of Portsmouth, Victory. Newble and Cannon
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(1994) believe the use of video clips can improve the impact of lecture content and provide variety in a lecture. They caution however, that students benefit from some consistency and advise against overuse of different presentation styles which can lead to confusion.

1.8.6 Audience response systems

Another enhancement to lectures is audience response systems (ARS), also known as personal response systems (PRS) and electronic voting systems (EVS), that involve students using handsets to answer questions. Johanna McMullan (2008) produced a special report at Queen’s University, Belfast, in which she discussed some of the advantages of using PRS. These include monitoring of attendance, as students can be individually allocated handsets, establishment of what students already know at the start of a lecture, so enabling the lecturer to use the time available effectively, and students being able to provide feedback to a lecturer on whether they need further explanation of a topic or are ready to move on. Formative assessment can take place as the lecture progresses, enabling the lecturer to assess the students’ understanding of the topic and data for each student can be collected via the handsets and then reviewed to reveal individual students’ knowledge or understanding. Changes in opinion or attitudes can be assessed, by asking the same question at the start and end of a lecture.

PRS systems also allow re-stimulation of interest when it has waned, by requiring active participation of students in answering questions and small group work can be undertaken, by allocating a handset to each group.

McMullan (2008) questioned students about the use of PRS in lectures and found them extremely positive. With regard to re-stimulating interest during a lecture, 92% of students felt it made the lecture more interesting and 80% felt it helped to keep their attention. Ninety eight percent of students were more likely to answer questions via a PRS than by raising their hands and all felt it encouraged them to participate in the lecture. The immediate feedback provided by the system was considered helpful by 98% of students, 99% felt it identified gaps in their knowledge, 96% said they would pursue further study and 99% found the session helpful.

Davenport, Hayes and Parmar (2009) effectively used an EVS at the University of Bath, to provide formative feedback to students on a computer science course. They identified 5
areas in which the EVS could be used to support learning and teaching - diagnostic testing at the beginning of a lecture, monitoring of understanding by students, provision of immediate feedback, keeping students actively engaged in their learning and promoting peer interaction and support.

Students were positive about the use of the EVS, albeit less so than in McMullan’s (2008) study. Of the students at Bath, 66% believed it revolutionised the problem solving classes in which it was used and 32% thought it was a useful addition. 62% of students wished the EVS had been used in previous years (it was used only in the final year of the course).

At Kingston University, Masikunas and Panayiotidis (2005) reported on the use of an EVS in first year business information systems and marketing lectures. The decision to use an EVS was made in order to address a perceived lack of student engagement in lectures, a lack of opportunity for students to express opinions and receive feedback, and little opportunity for lecturers to test the students’ understanding before moving on to new material. The authors argue that although such technology is relatively new, the pedagogy is not, as it dates back to Socrates and his ‘dialectic’ method of teaching, utilising a question and answer format.

Students and lecturers who participated in the lectures at Kingston University where the EVS was used were surveyed by means of questionnaires and focus group interviews. The students enjoyed the style of learning, working in small groups to solve problems and the instant feedback provided. Lecturers were positive because of the student engagement, increased job satisfaction, the ability to subsequently analyse the data and provide feedback on the effectiveness of their teaching and they felt that using the EVS helped to unite different nationalities and cultures. Masikunas and Panayiotidis (2005) concluded that the EVS provided a win-win situation for students and lecturers. They also report that students who worked with the EVS produced better final results, but no detail is provided.

Johnson and Robson (date not stated) at the University of Wisconsin in the United States of America (USA) introduced an EVS (they refer to the system by the term ‘clickers’, to denote the hand-held response pad used by the students) into an economics course. Students were divided into 2 groups, one of whom used EVS; the other did not. Results from surveys conducted at the beginning and end of the semester contrasted with the 3 studies cited
above as they indicated that there was no significant difference in student attitudes to attendance, class engagement, or in exam performance.

The authors caution that when new technology is introduced to the ‘classroom’, careful consideration must be given to how it is used, that the effectiveness of EVS may depend on the type, organisation and size of the course and that students are not always aware of the importance of engaging in a course and it is, therefore, imperative to explain to them how the EVS may enhance their learning.

1.8.7 PowerPoint

Gabriel (2008) describes how PowerPoint has completely redefined the nature of presentations. Originally used during the 1990s for business presentations, it rapidly became a way of streamlining lecture preparation and delivery in academia. Gabriel (2008) discusses some of the criticisms of PowerPoint, including its substantially limiting a lecturer’s ability to deviate from a preconceived lecture plan, so preventing variations and digression, improvisation and exploration. He quotes Tufte’s (2003) statement that “Power corrupts, PowerPoint corrupts absolutely” which he counters with the point that defenders of PowerPoint have made, that many of the programme’s perceived shortcomings are as a result of poor usage. Gabriel (2008) enthusiastically postulates that competent use of PowerPoint can turn a modest, old-fashioned lecture into a stimulating, entertaining and exciting show, providing the lecturer with the opportunity to present a coloured diagram in the place of a drawing on a blackboard, or a photograph or cartoon to support and augment the lecture or enliven the audience.

Whilst not everyone is as enthusiastic about PowerPoint as Gabriel, nevertheless, PowerPoint presentations are now used by many lecturers and, as pointed out by Race and Pickford (2007), give an immediate impression of a professional and credible lecture. Whilst also enthusiastic about the enhanced learning opportunities for students being able to see as well as hear a lecture, the authors do add the caveat that if all the slides provide a similar list of bullet points, this can be boring for students and that lecturers should endeavour to include a variety of visual information, such as photographs, diagrams or film clips.

Tips provided by Race and Pickford (2007) for effective use of PowerPoint slides in lectures include not having too much information on a slide, ensuring the font size is large enough
for all students to see, including pictures, cartoons and simple graphs, not including over-
complex graphs or flowcharts and, as mentioned above, making slides look different –
avoiding ‘death by bullet point’.

Susan Bassnett, discussed the use of PowerPoint in a Times Higher Education article in 2005. 
Whilst acknowledging that the days of ‘chalk and talk’ are long past, she was ambivalent 
about PowerPoint, pointing out that many a presentation has been marred for both 
presenter and audience by the failure of computer technology making it impossible for the 
presentation to be shown. Bassnett (2005) accepts that many of her fellow lecturers are 
wholly won over by the usefulness of PowerPoint, but warns that its supporters need to be 
fully competent to use the technology and have a fall-back option, should it fail.

An essay by Levasseur and Sawyer (2006) provided a comprehensive review of research into 
the effects of PowerPoint slides as a teaching aid, dividing their considerations into 4 
categories: student reactions, learning outcomes, learning styles and slide variation effects.

With respect to student reactions, Levasseur and Sawyer (2006) found that virtually all the 
studies they looked at (mainly from the USA) found that students responded positively to 
PowerPoint and preferred PowerPoint presentations over other methods. Reasons cited by 
students for their preference was that PowerPoint presentations helped them organise their 
notes, that they could learn more effectively from them and that they found them more 
interesting and entertaining.

The evidence reviewed by Levasseur and Sawyer (2006), as to whether or not the use of 
PowerPoint improves students learning outcomes is mixed, although the majority of studies 
found no significant difference in learning outcomes from lectures with or without 
PowerPoint slides. Levasseur and Sawyer (2006) note however, that in all the studies, 
students had copies of the PowerPoint slides and that the improved learning could have 
been the result of having an organised set of notes.

The same authors found only 4 studies exploring the relationship between PowerPoint slides 
and student learning styles. Perhaps not surprisingly, all the studies found that students 
performed better in classes that catered for their learning preferences. So students with
visual learning preferences performed better as a result of classes where PowerPoint was used.

Levasseur and Sawyer (2006) found a very limited amount of research in the area of slide variation effects. The findings however, suggested that adding more elements to PowerPoint slides did not increase learning and in 2 studies, making the slides more elaborate actually reduced learning, supporting the view of Newble and Cannon (1994) that overcomplicating a presentation can confuse students.

1.8.8 Podcasts and ‘lecture capture’

Newman (2010) reported that Bournemouth University was encouraging its staff to record lectures and upload the videos to the university website for students to access whenever is convenient for them. The university maintained that such an approach helped to enhance students’ learning due to the flexibility and choice of viewing time and also to avoid the cancellation of lectures when lecturers are unavailable. The University and College Union however, was concerned that podcasts might ultimately replace face-to-face lectures, in the light of a restricted number of lecture rooms. This intention was denied by the university. Newman (2010) reported that such ‘lecture capture technology’ is used in over 40 United Kingdom (UK) universities but where students had been surveyed, they wished to retain traditional face-to-face lectures, although the podcasts were considered useful for reviewing work and revision. As mentioned earlier, Brenton (2009) suggested using podcasts to enhance lectures, rather than replace them.

Cottrell (2007) suggests that podcasts may provide either a short synopsis of the content to stimulate student interest prior to a lecture, or be used following a lecture to boost student recall.

1.8.9 Training lecturers to lecture

Back in 1971, Bligh regarded lecturing as an art in which skill is acquired by practice, rather than by reading books and he professed that other than a few obvious points, such as the need to face the class, be audible and avoid irritating mannerisms, there were few rules in lecturing and little agreement on what constituted a good lecture. The latter point appears still to be true today. Bligh (1971) further declared that a lecturer was doing well if half his audience was pleased by his lecture, possibly a less acceptable situation today.
Recently there has been a much greater emphasis on guaranteeing good quality teaching in post-compulsory education and the government’s 2003 white paper, ‘The Future of Higher Education’ stated that “….all who teach must take their task seriously” and that “student choice will increasingly work to drive up quality…” Almost all higher education institutions in the UK now place increased importance on training for teaching, (Race & Pickford, 2007) usually requiring new lecturers to take part in teaching development such as post-graduate teaching certificate programmes, although, as Exley and Dennick (2004) point out, in practice, there may still be a pressing need to design and deliver effective teaching sessions long before the teaching qualification has been completed.

Additionally, large numbers of teaching staff in universities are part-time, including relevant professionals, such as the pharmacist teacher/practitioners who teach on many MPharm degree courses, post-graduate researchers and ‘occasional lecturers’ who have particular knowledge of a topic. In some institutions, such part-time lecturers outnumber the full-time teaching staff. Training for these part-time teachers may be more sporadic and variable than for full-time employees and they may find it difficult to participate in training and updating programmes. (Exley & Dennick, 2004).

Newble and Cannon (1994), referring to higher education in medicine-related subjects, similarly remark that it is commonly practised by those whose profession is not that of teaching, but of a science or clinical discipline and that most of these individuals have not been educated or taught to be teachers. The assumption tends to be made that being an expert in one’s own field automatically makes one a competent teacher. Exley and Dennick (2004) believe that all lecturers should have training in lecturing and presentation skills and be competent in the use of a range of audio-visual aids.

1.9 Student note-taking
Traditionally, it has been expected that students attend a lecture equipped with pen and paper and make notes on the content of the lecture, so that they have a permanent written record.
1.9.1 Why students should take notes during a lecture

Race and Pickford (2007), Newble and Cannon (1994) and McMullin and Munro (2003) all cite good evidence from research that students benefit from taking notes in lectures, as it enables them to personalise information by putting it into their own words and provides them with the opportunity to review their notes afterwards.

Kiewra (1991) quotes studies by Palmatier and Bennet in 1974 and by Canelos in 1983, indicating that the vast majority of students took notes in lectures, to revise from at a later date. Kiewra and Fletcher (1984) found that the quantity of notes taken was positively related to a student’s test performance, regardless of whether or not the student reviewed the notes and Kiewra (1991) cites numerous other studies supporting this hypothesis that simply recording notes in lectures improves student performance.

Annis (1981) assigned 100 American university students to one of 3 groups, who took their own notes, were given a set of partial notes or received a full set of lecture notes, respectively. The effect of the different styles of lecture notes was assessed using the scores on an essay test and MCQ questions, and asking about personal preference. Students provided with partial notes performed best on both the essay and MCQ tests and the most preferred style of handout was partial notes.

Charlton (2006) refers to the process of note taking as converting a passive experience into an active one that requires “attention, selection and organisation”, but which encourages deeper understanding and improves recall. Kiewra (1991) points out that a text is a permanent record, whilst a lecture is fleeting, so the student, unless he is able to remember all the information, must make notes for future reference.

1.9.2 Problems with note-taking

There is perhaps a tendency on the part of lecturers to assume that all students will come to university with the capability of taking notes during lectures, even though, as pointed out by McMullin and Munro (2003), many will have no prior experience of it, increasing numbers of students enter higher education with non-traditional qualifications and there are many overseas students whose first language may not be English. Even students who have undertaken A levels tend to consider themselves ill-prepared for higher education in terms
of coping with teaching styles such as lectures and study skills such as note taking. (Lowe & Cook, 2003).

McMullin and Munro (2003) highlight that note-taking is not as simple as it might seem, but requires multi-tasking – students need to listen to and observe the lecturer, process the information they receive, decide what warrants recording and then write it down. Brown (1978) remarks that listening and note-taking is considerably harder than reading and note-taking, as one can backtrack and compare or re-read parts of a book, but not of a lecture.

Perhaps not surprisingly then, students often struggle with note-taking, trying to write down as much as possible, rather than attempting to understand the material being presented and the resulting notes may be incorrect or have serious omissions. Swain (2008) believes that many students have difficulty structuring information in lectures. Cottrell (2007) recounts attempts made by universities in the 1990s to encourage groups of students to pool their notes to produce a complete set and study skills tutors trying to impress on students the need to ‘make sense’ of lecture material, rather than trying to write down everything.

McMullin and Munro (2003) suggest ways lecturers can help students to decide what to write down, by using verbal ‘signposts’ such as, “This is important to note”, “This is a key point”, or even, “Write this down!” They also point out that lecturers must include pauses that allow time for students to make notes.

Brown (1978) reports the findings of Hartley and Marshall in 1974 who estimated that only 11% of information was recorded by students. Work by Johnstone and Su in 1994 and reported by Exley and Dennick (2004) similarly suggested that only 10% of the words delivered by a lecturer in a traditional, didactic lecture were recorded by students. Kiewra (1991) and Swain (2008) are a little more encouraging, reporting that about 30% and 20-40%, respectively, of ideas from a lecture are recorded by students. It would clearly be beneficial however, for students to record most of the contents of a lecture, as indicated by the findings of a number of researchers between 1923 and 1976 and reported by Brown (1978), who claim that at least 60% of a lecture is forgotten by students within 24 hours.
1.10 Handouts

As stated by Race and Pickford (2007), modern university students like and expect handouts.

1.10.1 What a handout should include

Traditionally, a handout is a paper-based resource given out before, during, or after a lecture, to provide information, although this may be extended to include providing an opportunity for students to participate in activities and problem solving in lectures (Exley & Dennick, 2004).

Handouts intended primarily to provide information can take a variety of forms, including full lecture notes, such as a written summary of the lecture, copies of the lecturer’s PowerPoint slides, without any ‘added value’, or they may include additional information not given in the lecture, for students to process following the lecture. (Exley & Dennick, 2004; Race & Pickford, 2007; Newble & Cannon, 1994). Newble & Cannon (1994) however, warn against the distribution of complex handouts at the end of lectures that are never referred to by the lecturer, a point reinforced by Swain (2008).

The advantages of full lecture notes as seen by Exley and Dennick (2004) are that all students have a written record of the key concepts of the lecture, regardless of their note-taking abilities or language proficiency and students who are absent do not ‘miss out’. Disadvantages are seen as students perceiving that they do not need to engage with or even attend lectures, as everything they need is on the handout, points reiterated by McMullin and Munro (2003). Dent (2005) also believes that comprehensive handouts may encourage lack of concentration. Race and Pickford (2007) cite examples of students switching off mentally in lectures because they believe all they need is on the handout. The positive effect on assessment of partial handouts over full lecture notes was mentioned earlier and McMullin and Munro (2003) also believe that the provision of full lecture notes denies students the opportunity to develop the note-taking skills they require.

Challis, Robinson and Thomlinson (2009) found when interviewing students that some indeed believed that they could get all the material they needed from online handouts, without going along to the lecture. The authors suggest that online provision of notes may have a number of purposes, including providing an opportunity for students who have
missed lectures to catch up, allowing students to miss lectures or enabling students to listen to lectures without having to make notes.

Partial or interactive handouts that include important diagrams, figures or tables that would take too long for students to write down themselves, but include gaps and require students to take notes on or summarise other elements of the lecture are recommended by many authors, including Exley and Dennick (2004), Race and Pickford (2007), Newble and Cannon (1994) and Perrie (2003).

Exley and Dennick (2004) strongly believe that the best use of handouts is as a tool for active learning, ie they should include activities for students to undertake during the lecture, such as processing of information, application and problem solving. This type of handout may also give students a stronger sense of ‘ownership’ as they have inserted their own information and answers to questions. Activities that may be included on partial handouts, listed by the authors, include insertion of definitions, formulae, graphs, diagrams or flow charts, the making of lists and problem solving.

Exley and Dennick (2004) suggest that when students are asked to undertake learning tasks during a lecture, the lecturer should give clear instructions on the handout, as verbal instructions are more likely to be misheard or misunderstood. By leaving appropriate gaps for students to write answers and make notes, the authors believe that students will leave with a more complete record of their learning experience. McMullin and Munro (2003) also believe that partial, or ‘skeletal’ handouts are the most successful, citing a number of studies, as mentioned earlier, that demonstrate the best performance in assessments is seen when students are provided with partial notes, rather than full transcripts, or no notes at all.

Dent (2005) suggests a handout may constitute a ‘lesson plan’ that includes aims and objectives, a summary of the main points of a lecture, self-assessment questions and directions for self-directed learning and reading.
1.10.2 When handouts should be made available

The best time to issue handouts depends, according to Exley and Dennick (2004), on the purpose of the handout. Clearly an interactive handout that requires students to complete tasks during a lecture must be given out before or during the lecture. Alternatively, handouts may be made available online for students to print off themselves, when they wish. Handouts that contain additional information and reading lists or instructions for follow-up work may be given out at the end of a lecture.

Whenever handouts are made available to students, Exley and Dennick (2004) emphasise that their purpose and how they are to be used should be made clear to students, a point also made by McMullin and Munro (2003). Students should be told whether notes should be read before a lecture, whether they should take notes during the lecture, whether they need to undertake additional reading and if so, what, and how they can catch up with the material if they miss a lecture.

1.10.3 Students with particular needs

As highlighted earlier, the student population has been growing and changing over a number of years and, due to the government’s Widening Participation agenda, now includes those with non-traditional educational backgrounds, international students, students with varied social, cultural and religious backgrounds and students with disabilities and/or special needs (Exley & Dennick, 2004; Race & Pickford, 2007). In response to the Special Educational Needs Disability Act 2002, all educational institutions in the UK were required to review and enhance their support for students with disabilities and written guidelines and policies are now commonplace. (Exley & Dennick, 2004). Some of the disabilities that may affect students’ ability to benefit fully from a lecture, cited by the authors, are visual or hearing impairments and dyslexia.

Those with visual impairments may require lecture notes in large print or in audio format, those with hearing disabilities may wish to record lectures and this tactic is often utilised also by those with dyslexia who find note-taking problematic. Other dyslexic students find that a ready-organised partial handout is sufficient to enable them to take notes in lectures.
1.11 What students do during lectures

1.11.1 Learning

Learning may be described as a temporary or permanent change in behaviour and knowledge that arises as a consequence of some internal or external stimulus. (Barker, 1998). Honey and Mumford (1992) define learning as what has happened when a person can demonstrate that they know something or can do something they did not know or could not do, previously. Learning may be achieved through experience (experiential learning), or through being taught via formal, structured, pedagogic activities, such as lectures in a university. As observed by Tight (2003), teaching and learning may be considered as the core of higher education and it may be assumed that if lecturers are doing their job properly and students are paying attention, then lecturers teach and students learn. The reality of course is more complex.

1.11.1.1 Learning styles

As Cassidy (2004) says, research into learning styles has been particularly intense during the last 4 decades. He presents a concise history and summary of the development of models of learning styles during that time. Curry’s onion model, developed during the 1980s, proposes 4 layers of learning behaviour; Riding and Cheema, in the early 1990s, having identified more than thirty labels, proposed 2 broad categories of learning styles; and Rayner and Riding, in 1997, suggested 3 learning styles. Cassidy (2004) goes on to discuss a plethora of learning style models and instruments that use a variety of tests, tasks, questionnaires and inventories to categorise the users.

Honey and Mumford (1992) and Newble and Cannon (1994) list many factors that influence the extent to which an individual learns from a learning opportunity. These include a person’s recognition of the need to learn, their past experience of learning, their personal learning skills and the rewards and punishments experienced. Some factors are related to the learning opportunity, rather than the individual, such as the nature of the teaching, the impact of the teacher, or even the characteristics of the department organising the course.

Honey and Mumford’s (1992) primary interest, however, is in enabling more effective learning to take place by an understanding of an individual’s personal learning style. They point out that 2 people, matched for age, intelligence and need and exposed to the same learning opportunity will often react quite differently, one emerging enthusiastic and
enabled by the experience, the other declaring it a complete waste of time. The authors
believe the reason for such differences is that people have unspoken preferences about how
they learn – different ‘learning styles’. They define a learning style as the attitudes and
behaviours that determine an individual’s preferred way of learning and group learning
styles into 4 main categories – activists, reflectors, theorists and pragmatists.

Activists are described as gregarious people who constantly involve themselves with others
and seek to centre activities around themselves. They enthuse about and thrive on the
excitement of new and immediate experiences, but are bored by implementation or long
term consolidation. They like to solve problems by brainstorming and are open-minded and
unsceptical. Their days are filled with activity and they will try anything once.

Reflectors are cautious people who prefer to adopt a low profile, taking a back seat and
observing others in action. They like to listen to others before making their own points.
Reflectors like to gather data and consider it at length, postponing reaching a conclusion for
as long as possible. When they do act, it is as part of a wide picture that includes the past
and present, as well as their own and others’ observations.

Theorists tend to be detached and analytical people, dedicated to rational objectivity and
rejecting subjectivity and ambiguity. They will think problems through in a vertical, step by
step, logical manner, adapting and integrating observations and disparate facts into complex
but sound theories. They like analysis and synthesis, principles, theories and models.
Theorists’ approach to problems is consistently logical and they feel uncomfortable with
subjective judgments and lateral thinking.

Pragmatists are practical, down to earth people who like to get on with things, acting quickly
to make decisions and solve problems, which they see as a challenge. They like to search
out new ideas and take the first opportunity to experiment and try things out in practice.
They are impatient with rumination and open-ended discussion, believing that what works is
good.

Honey and Mumford’s (1992) model suggests that within any large group of students, there
will be a variety of learning styles and it can be seen that such differences might have a
profound effect on students’ attitudes to different teaching methods, with students learning more or less effectively from different learning situations, including lectures.

Although widely used and familiar to many people, the Honey and Mumford learning style questionnaire (LSQ) is not without its critics. Cassidy (2004) cites Duff and Duffy’s work in 2002 that indicated the use of the LSQ in higher education to be premature. Cassidy does acknowledge however, that Duff and Duffy studied a sample of only 388 students.

Exley and Dennick (2004) advise caution in the use of terminology such as that utilised by Honey and Mumford (1992) to label students, as their initial learning preferences may be challenged and modified, over the course of their studies.

It can be seen however, as pointed out by McMullan (2008), that lectures will suit the learning style of some students better than others, who may prefer other methods, such as the use of case studies, discussion or group work.

1.11.1.2 Approaches to learning

Brown (2004) describes how Entwistle and his co-workers used the earlier work of Marton and his colleagues to develop learning inventories to illustrate contrasting forms of learning. Students can be observed to adopt one of 3 basic approaches to learning, commonly referred to as surface, deep or strategic.

Students adopting a surface approach are mainly motivated by the need to complete a course, or by fear of failure and have a tendency to try and memorise factual material, rather than understand it. They passively accept ideas and information and concentrate only on assessment requirements.

Students who engage in deep learning are motivated by interest in the subject and an intention to understand material, rather than just remember it. They interact critically with the content, relating new ideas to previous knowledge and experience and using organising principles to integrate ideas.

Students with a strategic approach to learning may use processes characteristic of both surface and deep learning. They are motivated by the need to achieve high marks, whether
the material is interesting to them or not, and to compete with others. They will, as Tight (2003) states, strive to memorise sufficient material to pass a given assessment. The outcome is a variable level of understanding, depending on what is required by the course.

Newble and Cannon (1994) and Race and Pickford (2007) believe that although university teachers often claim to hope for a deep approach to learning in students, the nature of assessment tasks that focus on requiring students to reproduce what has been presented to them, such as over-reliance on multiple choice question (MCQ) assessments, encourages surface or strategic learning, rather than the adoption of a deep approach to independent study and learning. They recommend forms of assessment that require students to demonstrate understanding, such as essays, project work and critical analysis of problems. Brown (2004) also believes that current assessment systems favour strategic learners.

Another factor that Newble and Cannon (1994) believe to be counterproductive to the development of deep approaches to learning is the fragmentation of a curriculum into a large number of courses or units, taught by different lecturers from different disciplines.

Brown (2004) suggests that reproductive knowledge should not be dismissed out of hand, as knowing what and how are often as important as knowing why. Students need to be able to reproduce knowledge as well as having an understanding of it. Interestingly, Cassidy and Eachus (2000), cited by Cassidy (2004) found that academic achievement was positively correlated with a strategic approach to learning, but unrelated to a deep approach.

Brown (2004) notes that it is easier to induce a reproductive, rather than a deep approach in students and that no matter how hard lecturers try, only some students, not all, will become deep thinkers.

1.11.2 Problems with student behaviour in lectures

Exley and Dennick (2004) list some of the most common behavioural problems during lectures as students arriving late and disrupting lectures, mobile phones ringing and students talking or texting during lectures. This list is extended by Race and Pickford (2007) to include students leaving lectures early, being inattentive and sleeping. Hunter and Tetley (1999) even mention students reading newspapers during lectures. The various authors list purported reasons why students may display disruptive or inattentive behaviour, including
boredom due to lack of stimulation, simply not being interested in the topic, or finding the level of teaching too high or too low. Several possible causes for the increases in occurrence of inappropriate behaviour amongst students in universities are suggested. These include reduced discipline in schools resulting in more unruly behaviour which then continues into higher education, parents and guardians being less supportive towards educators and regarding student behaviour to be the institution’s concern, not theirs, students viewing themselves as consumers with the right to be disruptive if they wish to, students’ increased awareness of personal rights and reduced opportunities for lecturers, dealing with large student cohorts, to build positive relationships with students.

Interestingly, whilst Exley and Dennick (2004) assert that behavioural issues should be “nipped in the bud”, they offer few concrete ideas about how this may be achieved, merely counselling that many departments have a policy statement within which a lecturer should act, particularly if he wishes to bar entry to students arriving late. Other advice focuses on what a lecturer should not do, for example engage in direct confrontation, lose his temper, or simply ignore disruptive behaviour. Newble and Cannon (1994) agree that disruptive behaviour must not be ignored, both for the sake of the lecturer’s ability to concentrate and because the majority of students do wish to hear the lecture.

Race and Pickford (2007) suggest that ideally teachers should aim to prevent disruptive behaviour amongst students occurring, by providing good teaching and creating an environment in which it is unlikely to occur. Like Exley and Dennick (2004), they advise against displaying aggression, or ignoring the disruptive behaviour.

Newble and Cannon (1994) suggest tactics such as stopping talking until silence is restored, when students are chattering, and meeting offenders after the lecture to deal with any problems.

1.11.2.1 Boredom in lectures

Boredom has already been mentioned as a possible cause of disruptive behaviour and inattention in lectures and, according to Exley and Dennick (2004), lecturing has long been perceived by students as boring. The authors quote Stephen Leacock in Sherin (1995):
“Most people tire of a lecture in 10 minutes; clever people can do it in 5. Sensible people never go to lectures at all.”

Mann and Robinson conducted research in 2009 into student boredom in the lecture theatre. They found that 50% of 211 students they surveyed at a university in the north-west of England found all their lectures boring and 30% found most of their lectures boring. Whilst these students cited PowerPoint presentations as the most important teaching factor that contributed to boredom in lectures, they were referring to PowerPoint presentations without the use of handouts, where they were required to copy down all the information on the slides. Interestingly, these same students rated laboratory work and computer sessions more boring than lectures.

By far the most important factor influencing whether or not students found teaching sessions boring however, was found to be nothing to do with the content or presentation of the lecture but the students’ score on the Likert Boredom Proneness Scale (BPS), used by the authors to assess inherent proneness to feeling bored.

1.12 Attendance and engagement

The Collins English dictionary (2000) defines ‘to engage’ as to take part or participate. One might consider that if a lecture is purely didactic in the manner of its delivery, there is little opportunity for students to actively engage, other than by making notes, although one aspect of engagement that requires no physical activity is processing, thinking about and attempting to understand the information being received.

It has already been discussed that students are often, though not always, expected to take notes during a lecture, and that research has demonstrated note-taking to be beneficial to learning. Whether required to take notes or not, however, students cannot derive benefit from a lecture, if they have not attended and attendance can perhaps be considered the essential pre-requisite of engagement. Prince (2004) states that the importance of student engagement is widely accepted and cites a considerable body of evidence to support the effectiveness of student engagement, on a broad range of learning outcomes.

Many aspects of inappropriate student behaviour in lectures already discussed appear to indicate boredom and a lack of engagement and, as mentioned earlier, conventional
approaches to teaching and learning have often been criticised for their lack of ‘interactivity’ (Barker, 1998) with the traditional lecture viewed as a didactic, largely one-way process of transfer of information from lecturer to students.

1.12.1 Interactive lecturing to increase engagement

Attempting to introduce interactivity into lectures to improve student engagement is not a new idea. Bligh, as far back as 1971, wrote of using buzz groups of 2 to 6 students discussing issues or problems within a lecture for a couple of minutes at a time, using case studies in lectures and even getting students to give short talks. By 2007, Cottrell saw lectures evolving from a simple speech and slide show into a dynamic process that involves students in active engagement with their learning.

Race (1998) maintains that when students ‘learn by doing’ in lectures, they are better motivated to attend sessions because they find it harder to catch up on missed work than when they have missed a lecture where they were only expected to listen. He also suggests that lecturers should use lectures to provide feedback to students, talking them through common problems and showing them what constitutes a good answer. Prince (2004) presents evidence that introducing interactivity into lectures can significantly improve recall of information by students.

Providing opportunities for interaction and discussion in lecture theatres with the resultant need to facilitate many small groups simultaneously and control the noise level, is recognised as challenging by both Exley and Dennick (2004) and Race and Pickford (2007), although both pairs of authors believe the drawbacks to be outweighed by the benefits of a lecture being more stimulating and memorable for students and for higher level cognitive outcomes, such as applying knowledge and problem solving to be achieved.

1.12.1.1 Activities in the lecture theatre

Exley and Dennick (2004) cite examples they have gathered of how lecturers have increased student interest and activity in lectures. They found that having 2 lecturers in a lecture, rather than one, produced a ‘dialogue’, with the second lecturer seeking clarification, questioning assumptions, summarising arguments or challenging the presenter. They suggest the use of interactive elements and sub-sessions within the large group lecture format, such as students being asked to summarise and present their own understanding of
previous work at the start of a lecture. As the authors say, sitting in lectures, hour after
hour, listening and taking notes can be difficult and boring for students and, as previously
mentioned and reiterated by Perrie (2003), the attention span of most students in a lecture
is up to 20 minutes. It is desirable, therefore, to split a lecture into short sub-sections of
lecturer input, interspersed with student activities that provide opportunities for active
learning and interaction, to vary the stimulus of a lecture.

The use of PRS during lectures has already been discussed as a method of facilitating student
engagement during lectures. A less technologically demanding tactic suggested by Prince
(2004) is that lecturers simply pause periodically to allow students to clarify their notes with
a partner.

Exley and Dennick (2004) claim that such approaches of dividing lectures into shorter
sections can have a number of advantages for students, such as increasing their engagement
and interest, improving their absorption and retention of information and helping them to
check and review their understanding. The advantage for lecturers is that they receive
feedback on both student understanding and their own teaching.

The authors do allow however, that it is difficult to demonstrate that changing one aspect of
teaching (lecturing) in an extensive and complex curriculum is beneficial for everyone in a
class of students with different learning styles, preferences and expectations, who are
taught by lecturers with varying levels of skill and personal charisma.

Some of the activities Exley and Dennick (2004) suggest students might undertake during a
lecture are completion of passages of text, definitions, tables or formulae, drawing, labelling
or annotating graphs and diagrams, interpreting experimental results and drawing up lists.

They propose that most of these activities can be undertaken by 2 or more students working
together and that discussion with others allows students to organise their thoughts and
clarify their thinking. The students should be given precise instructions about what they
should do, for example, comparing lists, prioritising points, or looking for differences.
Newble and Cannon (1994) also believe the use of small groups of 2 to 8 students in ‘buzz
groups’ is stimulating for students, who can be asked to feed back to the lecturer on their
discussions.
1.12.1.2 Questions in the lecture theatre

Asking questions of students may appear to be a useful way for a lecturer to ascertain whether or not they have made sense of a topic and assess how well they are doing. Equally, asking students if they have any questions might seem a reasonable method of finding out what students still need to know or wish the lecturer to elaborate upon. The limitations of both these tactics are highlighted by Race and Pickford (2007) and Newble and Cannon (1994). If a lecturer asks, “Are there any questions?” he is unlikely to receive a response as students fear looking stupid in front of their peers if they ask a silly question. Equally, students will be reluctant to answer questions posed by the lecturer in case they are embarrassed by giving the wrong answer and the prospect of this happening if a lecturer addresses questions to individual students can induce a state of anxiety in the lecture theatre.

One way around this problem, suggested by Race (1998) is to ask students to write their questions on ‘post-its’, gather them in and address them in the next lecture.

Dent (2005) suggests using short formative assessments during lectures and Newble and Cannon (1994) recommend the use of multiple choice questions (MCQs) aimed at all, rather than individual students, to improve student attention. Perrie (2003) favours the use of short quizzes, based on the information presented, to actively involve students.

1.12.2 The argument against interactivity in lectures

The view that lectures should be interactive is not universally held. Hart, Waugh and Waugh (2000) argued that the traditional lecture as a teaching method can be an exciting experience in which students are stimulated, encouraged and motivated. They believe that lecturers should approach lecturing in terms of individuals learning as a group and within that group, rather than focusing on the individual.

Hart et al (2000) discuss some arguments used against traditional lecturing, such as boredom and inattention of students, lack of learning and commitment of information to long term memory, and lack of concern with and for individual differences in students. They believe boredom and inattention are due to poor lecturing where the lecturer speaks monotonously and unenthusiastically, without the use of gestures, humour, voice control or
visual aids. As regards long term memorisation, the authors maintain that lectures are only the start of the learning process and that students’ learning should continue following the lecture, by means of reading, discussion with peers, problem solving and argument, as these are the activities that lead to long term memorisation. They acknowledge that it is difficult to take account of individual difference in students within a lecture, but argue, similarly to Hart et al (2000), that considering the individual as the starting point is not the only approach and that there is no reason to expect everything to be taught on a one-to-one basis, as much of learning in life is as part of a group.

1.13 Attendance at lectures
1.13.1 Poor attendance

Returning to the subject of the opening paragraph of this chapter, Kottasz (2005) refers to Quality Assurance Agency/Higher Education Funding Council for England (QAA/HEFCE) policy documents making reference to student non-attendance at lectures being an area of concern.

It is worthy of note that such concerns are not a new phenomenon. Rodgers (2001) reports that as long ago as the 14th century, it was recorded that, “dwindling attendance at Oxford was deplored in sermons by the masters”. The same author suggests that whilst at that time, “war and pestilence” might have accounted for absenteeism, reasons for low attendance in modern times are less obvious.

Poor attendance at university lectures is not confined to the UK. Rodgers (2001) further cites reports of absenteeism being “rampant” at 3 US universities in 1993 and that an Australian university, in 2000, recorded attendance rates ranging from 68% early in the semester to 55% in the second half. Massingham (2006), at the University of Wollongong, recorded that only 67% of students attended a ‘review lecture’ on international business management, even though that lecture, during which information was provided about the exam, was usually the second best attended in the series.

Challis, Robinson and Thomlinson (2009) spoke to staff at the University of Sheffield, one of whom estimated that whilst 80-90% of students attended in the first few weeks of a course, by week ten, that had fallen to 60% or less.
1.13.2 Why students elect not to attend lectures

Many reasons have been suggested for students not attending lectures, including the availability of lecture notes, time-tabling issues, work commitments, assignment deadlines, lack of motivation and poor lecturing or lecture content. (McMullin & Munro, 2003). The same authors suggest ways of encouraging students to attend lectures, including the provision of partial rather than full notes, making notes available only during or after a lecture, hinting that exam questions will be stated during lectures and taking registers. Some lecturers might question whether they should be using such tactics that appear to oblige students to attend lectures, or if their aim should be to make students aware of the benefits to their overall learning and understanding.

Charlton (2006) suggests that the modern lecture, delivered in a dimly lit room by a disembodied voice providing commentary on a range of visual images, supported by printed handouts, may itself be a reason for students not attending lectures. He believes that such a “flaccid” learning experience offers no suspense or surprises to the students and adds little to their education. Charlton (2006) believes however, that the fact that most students prefer to enrol at residential higher education institutions, suggests that they want face-to-face teaching, rather than distance-learning courses that require a high level of motivation and self-discipline.

Furedi (2009) suggests there may be a more fundamental reason for non-attendance by some students at lectures – he believes that a significant minority of them are just not interested in the subject. Massingham (2006) discusses the work of several researchers from as far back as 1971 to 2004, who found that whilst some students go to university because they enjoy learning and find that lectures make knowledge more meaningful, many see education as a means to an end, their goal being to become qualified and find a good job and that these students will only attend lectures if they see ‘value’ in them, in helping them achieve that outcome.

Moore (2008) carried out a small, exploratory study with 230 students in the third year of a business studies course at the University of Limerick in Ireland. She noted that the assumptions within higher education institutions that lectures are a central and implicit part of the rationale for higher education may not accord with the views of students, who see lectures as only one part of an array of pressures they encounter whilst at university. Her
respondents tended to see lectures as optional and not always beneficial or important. Moore also found that for some students, non-attendance seemed to be a coping mechanism supporting other aspects of the course, or a sign that they were finding it difficult to manage the content, processes or schedules of the course.

Challis et al’s (2009) interviews with students revealed that some reasons stated for non-attendance included inconvenient times and days - 9am, 4pm, Mondays and Fridays were all unpopular with some students.

Hunter and Tetley (1999) cite 2 studies, conducted in 1992 and 1995 at Lincoln University that found the reasons given by students for non-attendance at lectures included competing assessment pressures, poor lecturing, timing of lectures and poor quality of lecture content. Having carried out their own investigation into reasons why students did not attend lectures at the University of Canterbury, they found the major reason to be the need to work on assignments, followed by students not considering the lectures worth attending. Reasons put forward for this perception included the information being available elsewhere and the lecturer simply going through a handout. Other reasons given for non-attendance were the lectures being considered boring, a waste of time, unnecessary or too easy, or that the timing was inconvenient (too early or too late).

Massingham (2006), eager to increase student engagement, conducted a survey investigating students’ stated reasons for non-attendance at both lectures and tutorials. He found the main reasons given were that the students were sick, busy, at work, or bored, that there were technological alternatives to obtain the information, or they did not like the teacher’s style or personality. When he removed health and lifestyle factors, the main reasons were finding the topic boring or just not liking it. He identified a group of students who felt they could pass the subject without attending lectures which they considered to be a waste of time.

Kottasz (2005) conducted a two-stage study at London Metropolitan University, collecting qualitative data by means of interviews with 12 students, followed by a quantitative survey of a sample of 155 undergraduates. She found that after illness, the most commonly stated reasons for non-attendance at lectures were the need to work on assignments, transport problems, timing of lectures and being able to obtain information from other sources, such
as friends, the university intranet, or text books. Interestingly, 60% of first year students claimed that their parents’ attitude influenced their decisions about attending lectures.

Westrick, Helms, McDonough and Breland, (2009) carried out a study of pharmacy students in the USA. They pointed out that absenteeism by students can be a problem not only for the students who do not attend, but also for those who do and for the teacher, as students who have missed previous sessions may require more repetition of information and explanations. They also believe that interaction between students and lecturers is important for what they term ‘professional socialisation’, where students observe lecturers and recognise them as role models. Hence, absenteeism may hinder students’ development of professionalism. Reasons given by students for not attending lectures included being ill, being tired or oversleeping, needing to work on assignments, information being available from other sources, not learning much from lectures, the work being easy and registers not being taken.

Summarising the findings of all the above authors, it appears that students do not attend lectures for a number of reasons unrelated to the lecture itself, including being ill, being tired or oversleeping, timetabling issues, pressure of other work such as assignments, lack of personal motivation and being uninterested in, or bored by, the subject. Reasons that concern the lecture and its delivery include lectures being considered unimportant because information is available from other sources, poor lecture content, the work being easy, lectures being unnecessary to pass assignments and dislike of particular lecturers’ personality or style.

1.13.3 Why students elect to attend lectures

As pointed out by Massingham (2006) and Hunter and Tetley (1999), a small group of students still go to university because they genuinely enjoy learning and feel that lectures make their knowledge more meaningful. Other reasons reported by various researchers and mentioned by Massingham (2006) are students’ appreciation of a lecturer’s ability to communicate clearly and also to analyse and synthesise complex material, or to simplify and explain material. Hunter and Tetley (1999) also found that students attended lectures when they felt the work was difficult or complex. Similarly, students also told Westrick et al (2009) that one of the main reasons they would attend lectures was because they perceived the work as difficult. Other reasons were wanting to make their own notes, the lecturer
providing material not readily available from other sources and the lecturer highlighting to the students what it was important to know.

Another reason for attending lectures, highlighted by Massingham (2006) is the acquisition of information about assessment tasks or exam questions. He additionally found that students would attend lectures when they liked the teaching and personality of the lecturer, a reason also mentioned by Hunter and Tetley (1999).

Challis et al (2009) found that maths students liked illustrative examples – a lecturer doing ‘live’ maths in front of them, and Kottasz discovered that some students attended lectures only because they felt an obligation because their friends or peers attended.

1.13.4 The correlation between non-attendance and student performance and progression
Perrie (2003) reports the findings of a study at an American university that found students who attended classes regularly achieved overall scores in exams about 9% higher than those who missed teaching sessions.

Rodgers (2001) studied the effects of attendance on performance in a statistics class of about 200 economics students, at an Australian university. There, attendance was found to have a small, but statistically significant effect, a student who attended only 74% of lectures scoring between 1.3 and 3.4 percentage points less than a student with 100% attendance.

Massingham (2006) points out however, that whilst several researchers have reported a strong association between attendance and performance, most have been unable to demonstrate a statistically sound causal relationship, although he found in his own study that attendance did have a positive impact on performance, particularly the final exam.

Bassili (2008), as part of a study exploring relations between students’ motivational and cognitive orientations and their attitudes and choices related to physically attending lectures or watching them online, found no correlation between examination performance and whether students attended lectures or watched them online, suggesting it was not important for them to be present in the lecture theatre.
Moore, Armstrong and Pearson (2008) note that the conclusions of studies into the relationship between lecture attendance and students’ subsequent academic performance are variable, some suggesting lecture attendance as an important factor in academic success and others purporting that the relationship is neither linear nor automatic. They also mention work suggesting a link between lecture attendance and academic performance may be weaker than previously assumed, and criticism of the imprecise methodologies employed in some studies that may weaken the ability to establish a causal relationship between lecture attendance and academic performance. Moore et al (2008) conclude from their literature review that none of the findings suggest that lecture attendance is either necessary or sufficient in support of academic performance.

Hunter and Tetley (1999) observe that lecture attendance would appear not to be an important factor in student performance at the University of Canterbury as, over a number of years, student attendance at lectures has declined, whilst pass rates have increased.

1.14 Reasons for research in higher education

Tight (2003) observes that up to the end of the last century, higher education was a relatively under-researched field although, in more recent years, there has been a plethora of books and articles published on the topic. This increased output of higher education research has been driven by the increasing importance of higher education in developed countries, where, as discussed earlier, there has been a move from higher education for an elite minority to higher education for the masses. Governments throughout the world that see the rise of the ‘knowledge society’ and technological developments as necessitating increased investment in education wish to ensure that their funds and resources are being used effectively and to be assured of the quality of the higher education they are funding. Both these concerns require research and the fact that higher education is so important to the governments, industries and individuals within so many societies makes it a worthwhile topic of research.
1.15 Research questions

From the research reviewed, whilst some researchers have found that students who attend lectures perform better in assessments than those who do not attend, overall, as highlighted by Hunter and Tetley (1999), non-attendance at lectures appears to be increasing, whilst students’ academic achievements are improving. It is also difficult to demonstrate that any correlation between attendance at lectures and academic performance is causal, as many other aspects of students’ backgrounds, personalities and behaviour can have an effect. Nevertheless, as data regarding both lecture attendance and progression rates of MPharm students for the year 2007-8 was collected in the University of Portsmouth School of Pharmacy and BMS, it was considered interesting to know if any correlation existed, between levels of attendance at lectures and academic performance. (Research question 1).

As discussed earlier, lectures are the main teaching method employed on the MPharm programme so, regardless of whether any correlation between attendance at lectures and academic performance can be shown, it would seem desirable that students attend lectures, if they are to maximise the learning opportunities provided by the course. Clearly, from lecturers’ comments, this does not always happen and non-attendance is seen in many other universities and countries. This research will attempt to ascertain the reasons why students on the University of Portsmouth MPharm programme attend or do not attend their timetabled lectures. (Research question 2).

As discussed by several authors, students in lectures need to be able to multi-task, being required to listen to, process and understand information and then, in many cases, make notes for future reference. Students will be asked to talk about their experience of listening to, understanding and taking notes in lectures. (Research questions 3 and 4).

Most of the research cited has concentrated on students, but it is considered appropriate that lecturers’ opinions are sought, so as to identify and better understand the similarities and differences in their attitudes, compared with students’. (Research question 5).

The only study identified that involved pharmacy students was conducted in the USA, addressing reasons why students did not attend lectures. This study aims to discover if other UK Schools of Pharmacy have any concerns over students’ attendance at, or engagement with, lectures on their MPharm courses. (Research question 6).
The research questions that this study aims to answer are:

1. Is there a correlation between MPharm students’ attendance rate at lectures and their progression rates at the University of Portsmouth?

2. Why do students attend / not attend lectures?

3. Do students have any issues with listening to or understanding lecturers?

4. Why do students take / not take notes in lectures?

5. What are lecturers’ attitudes towards lectures and students attending lectures?

6. Do any other UK Schools of Pharmacy have issues with student attendance at and engagement with lectures?

In order to address the research questions, the following objectives will be addressed:

1. To analyse quantitative data collected during the academic year 2007-8 and ascertain if there is any correlation between students’ attendance rate at lectures and examination marks.

2. To recruit approximately 8 students from each stage of the MPharm course to be members of focus groups.

3. To arrange and hold semi-structured focus groups representing each year of the MPharm, using audio and visual recorders.

4. To conduct semi-structured interviews with MPharm lecturers.

5. To transcribe audio recordings from the focus groups and interviews.

6. To analyse transcript data, identifying emergent themes.
7. To construct a questionnaire to be sent to Heads of UK Schools of Pharmacy.

8. To analyse questionnaire data.

9. To report all findings and make recommendations.
Chapter 2
Methodology and methods

2.1 Research methodology
Research is another word for enquiry, which may be thought of as a way of solving problems ranging from the purely theoretical to the totally practical. (Robson, 2002). Davies (2007) describes research as being any of 3 processes - gathering data in a strictly organised way leading to an end product that varies from simple description to reflection and interpretation, testing an idea or assertion (a hypothesis), or engaging in interactions with parts of the real world and reporting on their meanings.

The theory of how research should proceed is termed methodology. (Schwandt, 1997). According to Alasuutari, Bickman and Brannen (2008), methodology constitutes a whole range of strategies and procedures, including developing a picture of an empirical world, asking questions about that world, turning those questions into researchable problems and finding the best means of doing so. As pointed out by Robson (2002) and Alasuutari, Bickman and Brannen (2008), the research strategies and research methods employed must be appropriate for the research questions posed, that is, the methodological processes must be tailored to fit the empirical world under study.

2.2 Research approaches and paradigms
2.2.1 Quantitative research
The term quantitative indicates something that can be expressed in terms of quantity, a definite amount or number, and the term is often used as a synonym for a design or procedure that relies principally on the use of quantitative data. (Schwandt, 1997). Quantitative research uses numbers and statistical methods and seeks measurements and analyses that are replicable by other researchers. (Thomas, 2003). Robson (2002) refers to quantitative research as having a ‘fixed’ design and being theory driven. As Smith (2002) says, the quantitative researcher may be testing a hypothesis, investigating frequencies of events, or quantifying relationships between clearly defined variables.

Teddle and Tashakkori (2009) explain that quantitative researchers employ deductive logic in their work. Their research starts from a general theory or conceptual framework and may involve hypotheses from which observable consequences are deduced. A research
hypothesis is defined by Teddlie and Tashakkori (2009) as a specialized, quantitative research question in which investigators make predictions based on theory, previous research or some other rationale, about the relationships among social phenomena, before conducting a research study. After deducing what, logically, must be seen in the world if the hypotheses are true, quantitative researchers gather empirical data and test their hypotheses.

Quantitative studies can answer questions related to what, how much and how often something is happening (Kairuz, Crump & O’Brien, 2007; Hancock, Ockleford & Windridge, 2007). Examples of quantitative research provided by Robson (2002) are randomised controlled trials (RCTs) for drug assessment and large scale surveys for social research.

2.2.2 Qualitative research

Qualitative is an adjective usually attached to varieties of social enquiry and there have been many attempts to define the basic characteristics of ‘qualitative research’. Possibly the simplest use of the term ‘qualitative’ is to describe data which is in the form of words (Schwandt, 1997; Denscombe, 2007) and qualitative methodology is the techniques associated with the gathering, analysis, interpretation and presentation of such narrative information (Teddlie & Tashakorri, 2009).

Qualitative studies are considered most appropriate for answering ‘how?’ and ‘why?’ questions (Smith, 2002; Kairuz, Crump & O’Brien, 2007) and concentrate on understanding the thinking and behaviours of individuals and groups in specific situations. Such social research sees humans constantly engaged in interpretation of their environment and gives authentic accounts of human thought, feeling and actions, whilst recognising that those accounts do not necessarily apply to all people and do not allow predictions to be made in the same way as in quantitative science. (Arksey & Knight, 1999; Alasuutari, Bickman & Brannen, 2008).

2.2.3 The relative positions of quantitative and qualitative research

Denscombe (2007) summarises the differences between quantitative and qualitative approaches to research as quantitative research being associated with numbers, analysis, large scale studies, a specific focus, researcher detachment and a predetermined research design, whilst qualitative research is associated with words or images, description, small-
scale studies, a holistic perspective, researcher involvement and an emergent research design.

During the post-World War II years, a quantitative approach to research became dominant, with qualitative research often regarded as unscientific and occupying a preparatory role for the conduct of quantitative work. As Brannen (2005) explains, quantitative researchers have tended to see qualitative research as too context specific, with claims based on unrepresentative samples and, therefore, not statistically generalizable, whereas qualitative researchers have viewed quantitative research as overly simplistic, decontextualised and failing to take account of the meaning people attach to their experiences.

2.2.4 Paradigms

Schwandt (1997) and Frankfort-Nachmias and Nachmias (1996) refer to the American science historian, Thomas Kuhn’s use of the term paradigm to mean a type of cognitive framework, or set of shared solutions to problems, used by a community of scientists; a matrix of commitments, beliefs, values and methods, shared across a discipline. Teddlie and Tashakkori (2009) define a paradigm as a worldview, including the assumptions and philosophical and socio-political issues associated with that view and Creswell (2003) describes a paradigm as a researcher’s assumptions about how and what they will learn during their enquiry. Whilst quantitative and qualitative approaches to research are themselves sometimes referred to as paradigms, the more common use of the term paradigm includes the philosophical aspects of such a research framework. In this thesis, the term ‘approach’ will be used to describe quantitative and qualitative research and their associated methods and techniques, whilst the term ‘paradigm’ will be used to signify the practice associated with a particular scientific community committed to the same norms, rules, standards and philosophical beliefs.

2.2.4.1 Positivism

According to Schwandt (1997), the term positivism was first coined by August Comte, to indicate a philosophy of strict empiricism, a belief that the only legitimate knowledge claims are those founded on direct experience or observation. According to Robson (2002), positivists maintain that only one reality exists and it is the task of the researcher to discover what it is. Other assumptions of positivism include that scientific enquiry separates facts from values and so is value-free; all scientific propositions are based on facts, and
hypotheses are tested against those facts; the purpose of science is to develop universal causal laws, and explaining an event is simply relating it to a general law (Robson, 2002). Referring to positivism and social enquiry, Comte asserted that the aim should be to identify the laws that govern the development of society. (Schwandt, 1997).

2.2.4.2 Post-positivism

Robson (2002, p26) quotes Byrne as long ago as 1998 (p37), asserting that, “Positivism is dead. By now it has gone off and is beginning to smell.” Post-positivism is a replacement which, whilst still bound to the quantitatively oriented vision of science, recognises criticisms made of positivism as a viable philosophical underpinning for research. Post-positivists accept that empirical observations are important, but reject the idea that such observations provide an immutable foundation for knowledge claims and challenge the traditional notion of the absolute truth of knowledge. They recognise that the best that researchers can do is to develop contingent, fallible knowledge claims, particularly when studying the behaviour and actions of humans. Unlike positivists, post-positivists accept that the theories, hypotheses, background, knowledge and values of the researcher can influence research and what is observed and therefore, facts are theory- and value-laden. (Schwandt, 1997; Robson, 2002; Creswell, 2003; Teddlie & Tashakkori, 2009).

2.2.4.3 Constructivism

Constructivists reject scientific realism and objectivity and the basic ontological tenet of the constructivist approach is that reality is socially constructed. Constructivists claim that individuals seek understanding of the world in which they live and develop varied and multiple, subjective meanings of their experiences and that researchers construct the meaning of the phenomena under investigation, seeking to make sense of how others view the world, rather than narrowing meanings into a few categories or ideas. Hence, knowledge is not just a reflection of what is there, but rather a reflection of what people make of what is there, and reality is seen as being multiple and holistic. Like post-positivists, constructivists also recognise that their own cultural and historical background shapes their interpretations which are, therefore, value-laden. Only time- and context-bound hypotheses are believed possible. (Schwandt, 1997; Robson, 2002; Creswell, 2003; Teddlie & Tashakkori, 2009).
2.2.4.4 The paradigm wars

The post-positivist/positivist paradigm is generally considered to be the realm of quantitatively oriented social and behavioural scientists who primarily work within and are principally interested in numerical data and analysis, whilst researchers with a qualitative orientation who are principally interested in narrative data and analysis, usually subscribe to the constructivist paradigm. (Teddlie & Tashakkori, 2009).

During the 1960s and 1970s, following the publication in 1962 of Kuhn’s work, ‘The Structure of Scientific Revolutions’ and its revision in 1970, it was particularly fashionable to refer to the ‘paradigm debate’, or ‘paradigm wars’. These terms referred to the conflict between the competing scientific philosophical and methodological issues of quantitative and qualitative approaches to research and their respective merits and assumptions. (Schwandt, 1997). Kuhn perceived a distinction between ‘normal science’ where the dominant, established paradigm is continually advocated, defended, and verified, resulting in constraint of scientific progress, and ‘revolutionary science’, characterised by the abrupt development of a rival paradigm. He believed the old, dominant paradigm would then be tested, anomalies uncovered and eventually the old paradigm would be rejected and the practice of ‘normal science’ within the framework of the new paradigm, would resume. (Frankfort-Nachmias and Nachmias, 1996).

There was a widely-held belief at that time, in line with Kuhn’s thinking, that the perceived ideological divide between the paradigms rendered them incompatible (the incompatibility thesis) and it would be inappropriate to combine them in a research project. This thinking was particularly prevalent in the areas of evaluation research and education. (Schwandt, 1997; Robson, 2002; Alasuutari, Bickman & Brannen, 2008; Teddlie & Tashakkori, 2009).

Whilst however, Kuhn’s views were popular, not all researchers concurred with them. The British philosopher of science, Karl Popper, for example, maintained that a scientific community should be an open society where no dominant paradigm is ever sacred and described Kuhn’s ‘normal’ scientist as a victim of indoctrination, a prisoner caught in his paradigm. (Frankfort-Nachmias & Nachmias, 1996).

2.2.4.5 A mixed method approach

Alasuutari, Bickman and Brannen (2008) believe that the paradigm wars between the qualitative and quantitative methods have contributed to an exaggerated distinction
between the 2 camps. Qualitative researchers have always been innovative and flexible in applying different approaches and there is now a trend towards an increase in the explicit use of mixed method research designs and a growing pragmatism and diversity in the ways in which the integration of quantitative and qualitative data is viewed. As Denscombe (2007) states, at its simplest, a mixed method approach is just one that uses both qualitative and quantitative methods within a single research project, with a focus on the links between approaches and an emphasis on practical approaches to research problems.

Alasuutari, Bickman and Brannen (2008) observe that mixing different methods is not a recent phenomenon, having been used as long ago as the 1960s and has historically been intrinsic to many types of social science research, but the growth of explicit interest in mixed method research designs dates from the late 1980s. Bryman (2008) points out that education, the subject of this study, is an area that overlaps with social research and in this thesis, when social science or social research are mentioned, the terms are intended to include education research.

Teddlie and Tashakkori (2009) believe that throughout the 20th century, social and behavioural scientists frequently employed mixed methods in their studies, but agree that mixed method research has emerged as an alternative to the dichotomy of the qualitative and quantitative traditions, particularly during the past 20 years, with the first explicitly defined mixed method designs emerging during the mid-1990s.

Alasuutari, Bickman and Brannen (2008) perceive research in the social sciences today as distinguished by a positive orientation towards engaging in different types of research practice and a greater permissiveness towards mixing methods. They argue that although quantitative and qualitative methods have evolved from very different scientific traditions, they can be considered to form a continuum and that the 2 concepts are not so much terms for alternative methods of social research as 2 social constructs that group together particular sets of practice. They further maintain that because much of empirical social science research cannot be classified as either qualitative or quantitative, the tendency away from the binary, qualitative versus quantitative system and towards methodological pluralism, is a welcome development.
Other authors are in agreement. Crabtree, as long ago as 1993, maintained that approaches to data collection and analysis should be less concerned with shifting paradigms and more focused on identifying the most appropriate approach to answer the immediate research question.

Arksey & Knight (1999) believe that for some purposes, quantitative methods are the best; in other cases, the choice will be qualitative, but the 2 approaches can be complementary, rather than incompatible and many studies benefit from mindfully using each approach for different purposes at different stages of the research. Similar beliefs are expressed by Smith (2002), who suggests that qualitative studies can be a valuable adjunct in areas of research that traditionally rely on a quantitative approach, or can be used to explain phenomena uncovered by quantitative research.

Denscombe (2007) and Brannen (2005) believe that the practice of mixing methods, all quantitative, all qualitative, or a mixture of the 2, may constitute a research strategy in its own right and Brannen (2005) lists a number of reasons why mixed method research, especially that combining quantitative and qualitative approaches, has come to the fore.

Firstly, Brannen (2005) sees mixed method research as a means of skill enhancement for the researcher. As she says, training across the spectrum of research methods is now a mandatory part of the doctoral experience but knowledge should be put into practice quickly, if it is not to be lost. Secondly, Brannen (2005) sees experience of mixed method research as an opportunity for lifelong learning. She believes it militates against researchers becoming entrenched in a particular method or type of research. Whilst however, Brannen (2005) believes that mixed method research may encourage ‘thinking outside the box’, by deflecting attention away from theoretical work specific to particular disciplines, she is clear that the practical relevance of methods is not a substitute for theoretical relevance and that cross-disciplinary collaboration should not undermine the importance of theory.

Bryman (2008) advocates the adoption of a pragmatic position which either ignores the paradigmatic differences between qualitative and quantitative research or recognises them but, in the interest of exploring research questions with as many available tools as possible, pushes them to one side. In place of an emphasis on philosophical issues and debates,
issues to do with the mixing of methods become matters of technical decisions about the appropriateness of those methods for answering research questions.

Robson (2002) also perceives advantages in combining qualitative and quantitative approaches in research, using multiple or mixed method designs that incorporate both quantitative and qualitative elements. He emphasises the practical importance in the real world of research findings, rather than merely statistical significance and believes in a multidisciplinary approach, a catholic and eclectic use of any research designs that might prove helpful in answering the questions posed.

The term ‘real world research’, Robson (2002) explains, means research carried out in natural settings, rather than in a laboratory. He uses the term to suggest applied, rather than pure research; policy research, rather than theoretical research; research used to solve problems, rather than just to gain knowledge. Studying people is, in Robson’s view, very different from studying physical objects or non-human organisms and, because it takes place outside the laboratory, experimental control becomes difficult or impossible. Respondents should be viewed not as objects, but as experts whose views are sought. Robson (2002) suggests that the degree of control required in purely quantitative research is often impossible to achieve in the real world and in many fields, including education, there can be considerable advantages in using a mixed method approach, where the design evolves as the research proceeds and which may yield both quantitative and qualitative data.

Creswell (2003) justifies his inclusion of mixed method research in his book by asserting that mixed method research has come of age and that a discussion of only quantitative and qualitative methods would be to omit one of the major research approaches currently in use. In agreement with Alasuutari, Bickman and Brannen (2008), he views the situation as less about qualitative versus quantitative and more about research practices being on a continuum between the two.

Denscombe (2007) believes that good research tends to use parts of both qualitative and quantitative approaches with the difference being the extent to which the research lies in one camp or the other. He perceives the assumptions of the 2 approaches as frequently overlapping, rather than falling either side of a clear dividing line. Advantages seen by Denscombe (2007) of using a mixed method approach to research include improved
confidence of researchers in the accuracy of their findings, a more complete picture of the topic under investigation, compensation for the strengths and weaknesses of various methods by combination with others and development of the analysis by one method building on another.

**2.2.4.6 Pragmatism**

As described above, much has been written in recent years about a pragmatic approach to combining research methods to best answer the questions posed in a research study. Teddlie and Tashakkori (2009) perceive pragmatism as a paradigm in its own right, describing it as the philosophical orientation most often associated with mixed method research. They view pragmatism as a deconstructive paradigm that debunks concepts such as truth and reality and focuses instead on what works as the truth, regarding the research question under investigation. According to Teddlie and Tashakkori (2009), the project of pragmatism has been to find a middle ground between philosophical dogmatism and scepticism and to find workable solutions to long-standing philosophical problems. They view pragmatism as rejecting the either/or choices associated with the paradigm wars and advocating the use of mixed methods in research.

Thus, pragmatism is not committed to any one system of philosophy and reality and pragmatic researchers draw from both quantitative and qualitative assumptions, feeling free to choose the methods, techniques and procedures that best enable them to understand a research problem. (Creswell, 2003).

In summary, pragmatism views inquiry as occurring similarly in research and day-to-day life, prefers action to philosophising, endorses practical theory and sees knowledge as being constructed and based on the reality of the world one experiences and lives in. It offers the pragmatic method for solving traditional philosophical dualisms as well as for making methodological choices.

**2.2.5 Paradigmatic and methodological approach to this study**

It is believed that the research questions and objectives of this study, 'Student engagement with formal lectures on the MPharm programme at the University of Portsmouth', lend themselves to a pragmatic, mixed methods approach, for the reasons outlined below:
The data on student attendance by MPharm students, collected within the School of Pharmacy and BMS during 2007-8, is quantitative in nature, as are the data on progression rates for the same period. These data, therefore, call for analysis using quantitative analysis techniques.

The research questions and study objectives relating to students’ and lecturers’ attitudes towards lectures were addressed by means of interviews and focus groups, resulting in qualitative data in the form of typed transcripts that required thematic analysis.

The questionnaire sent to SoPs (Appendix 9) was designed to collect both quantitative and qualitative data.

In spite of his own caveat that research that uses multiple, rather than single research methods is still viewed as dubious by some academics, compared with the high academic prestige of purely quantitative, ‘scientific’ research, Robson (2002) believes the recognition that all methods have strengths and weaknesses leads to the conclusion that a multi-method approach, using several methods of enquiry is likely to be better than any single one in shedding light on an issue. In agreement with these views, it is believed that the most appropriate approach to this study is a pragmatic, mixed method approach.

2.3 Research design

Research designs represent different models for carrying out research and have distinct names and procedures for collecting, analysing and interpreting and reporting data associated with them. (Creswell & Plano Clark, 2007). Having decided on a mixed method approach to a research study, the researcher must then decide on the most appropriate mixed method design.

Cresswell and Plano Clark (2007) recognise 4 major types of mixed method design – embedded, exploratory, explanatory and triangulation. Hammersley (2008a) however, cautions against viewing triangulation as a design in its own right, as the term does not necessarily imply mixing of quantitative and qualitative methods. In keeping with the views of Hammersley (2008a), in this thesis, triangulation will be considered in the context of its more traditional meaning, as a technique used to enhance confirmation and completeness, as discussed below.
The mixed method designs described will be of 3 types – embedded, exploratory and explanatory. In all 3 designs, both quantitative and qualitative data are collected in different phases, but are connected in some way (Cresswell, Plano Clark & Garrett, 2008).

In an embedded design, one set of data is used to lend support to another set of data, in the belief that different questions need to be answered in different ways. Sometimes qualitative data is embedded within a quantitative methodology and sometimes the other way round, with one of the data types playing a supplemental role within the overall design.

In an exploratory design, the first method used is qualitative and the results of this are used to design a data collection instrument, identify variables or state propositions for testing, for the second, quantitative phase.

The third model, the explanatory design, is the design adopted for this study. Here, the overall purpose of the design is that qualitative data explains (or builds upon) quantitative results. According to Cresswell and Plano Clark (2007), this type of design is the simplest of the mixed method designs. Advantages of such a design perceived by the authors include simplicity of implementation that enables a single researcher to carry out the study, the ability to write the report in 2 phases and the possibility of carrying out multiphase investigations. Possible disadvantages cited are the length of time required to complete the separate phases of the research, deciding who to include in the follow up phase and selecting which quantitative results require or warrant further explanation.

In this study, the data used in the initial quantitative phase of the study resulted from the monitoring of students’ attendance at lectures and the progression data compiled following summative assessments of students. The explanatory phase involved student focus groups and lecturer interviews. A final phase combining quantitative and qualitative data collection, by means of a questionnaire addressed to UK Schools of Pharmacy provided contextualisation of the findings.

The diagram below illustrates the mixed method, explanatory design of this study.
Figure 2.1 - Study design
2.4 Data collection

2.4.1 Qualitative data collection methods

The main methods of qualitative data collection are interviews, focus groups, observation, documentation such as letters, diaries or photographs, narrative and open ended questions in questionnaires (Hancock, Ockleford & Windridge, 2007). For this study, because the views and opinions of participants were sought, interviews and focus groups were utilised. Open ended questions were included in the short questionnaire sent to UK SoPs to scope the issue under study even though, as highlighted by Hancock, Ockleford and Windridge (2007), the responses to these can sometimes be a source of frustration as, unlike during an interview, the researcher has no opportunity to clarify any of the points made.

2.4.1.1 The decision to use focus groups or individual interviews

Focus groups are also referred to as group discussions, group interviews, focused interviews, citizen panels and sensitivity panels (Litosseliti, 2003). The term ‘focus group’ will be used in this thesis.

According to Crabtree (1993), focus groups and individual interviews can be equally effective in answering some research questions, but he perceives some differences between the two types of interview. Firstly, there is a commonly held belief about a difference in economy of time and money, focus groups being seen as a quicker and cheaper means of gathering data than individual interviews, a point emphasised by Greenbaum (1998). Crabtree (1993) points out however, that focus groups require considerable planning and organisation compared with individual interviews and funds are more often needed for refreshments, incentive payments and sometimes suitable venues. Crabtree (1993) allows however that the rule of thumb for individual interviews is that a study will require 8 to 10, whilst 4 to 6 focus groups are typical, so individual interviews usually require more interviewer time and there will be more transcripts to analyse. Greenbaum (1998) also sees individual interviews as more time-consuming than focus groups, assuming the same number of people is to be interviewed.

For this study, focus groups were conducted with MPharm students and individual interviews with lecturers who taught the MPharm students. Although the 12 interviews conducted (2 pilot interviews and 10 interviews used for the study) did require more interview time, the organisation time was considerably less than that needed to arrange the
focus groups. Additionally, as the lecturers all have different work commitments, it would have been difficult to find a convenient time to hold focus groups. Out of term time, when lecturers are not teaching, they are often away from the university, for example, acting as external examiners, on leave, or pursuing research-related activities. As the researcher was a lecturer in the same university and most of the interviews were conducted during vacation periods during 2009 and 2010, there was relatively little difficulty in arranging a mutually convenient time for interviews to take place with individual lecturers, whilst organising focus groups could have been problematic.

Crabtree (1998) suggests a difference in the ‘depth and breadth’ of data generated by focus groups and individual interviews. His contention is that a focus group produces greater breadth, as the topic guide is usually less detailed, to allow for the group dynamic between participants that is being sought, whilst the data from interviews will be deeper as a more detailed topic guide is usually generated with more specific probes and prompts to clarify meanings. Fox (2006) sees individual interviews as being valuable where a variety of stories is expected and focus groups being useful where benefit is perceived in obtaining a group story and participants may agree or disagree about a topic.

Greenbaum (1998) states that there is a lack of interaction in individual interviews, whilst Crabtree (1993) believes interpersonal dynamic to be present in both focus groups and individual interviews, although he believes the nature of the dynamic to be different. Whilst in a focus group, the moderator acts as a guide, facilitating and managing the group discussion, in an interview, Crabtree (1993) suggests, the interviewer seeks rapport, creating empathy, privacy and intimacy. Fox (2006) agrees with the latter view, believing that individual, face-to-face interviews can be the best way of collecting high quality, qualitative data.

In this study, it was anticipated that students might find an individual interview with a lecturer somewhat intimidating and that focus groups, with other students acting as moderators, were more likely to provide good quality data. There was a sense of empathy between the moderators and the participants that perhaps would not have been achieved had the main researcher (a lecturer) acted as the moderator.

In the case of the individual interviews with lecturers, the main researcher acted as the interviewer, but the interviewees were known to her, so there was little need to seek rapport as this already existed.
2.4.2  Focus groups

2.4.2.1  History of focus groups

Focus groups originated in sociology in the 1920s but for several decades until the 1970s, were primarily used by market researchers, before regaining popularity in the social sciences in the 1990s. They are now increasingly used as a research tool for varied reasons, including questionnaire development and programme evaluation, and not only in social sciences but in a wide range of other fields, such as health studies and education. (Smithson, 2008; Frey & Fontana, 1993; Wilkinson, 2004).

2.4.2.2  Reasons for using focus groups

The purpose of a focus group, according to Krueger and Casey (2000), is to listen and gather information. They cite some of the reasons for using focus groups as looking for the range of ideas or feelings that people have about something, for example an issue, a product or a service, uncovering factors that influence opinions, behaviour or motivation and gathering information to help shed light on quantitative data already collected. The goal of using focus groups is to collect data that are of interest to the researcher, typically to find the range of opinions of people across several groups. The reasons that focus groups were considered an appropriate method of collecting data for this study are detailed below.

Morgan and Krueger (1993) discuss some of the circumstances in which it is desirable to use focus groups, primarily because of the group interaction generated in response to the questions posed. The first is when there is a power differential between participants and decision makers. In the case of MPharm students at the University of Portsmouth, whilst their feedback is regularly sought on the structure and conduct of the course and there are student representatives at meetings of Boards of Study and Student/Staff Consultative Committees, decisions about the content of the MPharm course and the teaching methods employed in its delivery are largely made by employees of the university, in line with the requirements of the GPhC, who accredit the degree. Additionally, in most cases, the decision makers are older and more experienced than the students and also professionally qualified, indicating a power differential between the participants (students) and the decision makers (academics).
The second case is when there is a gap between professionals and their target audiences. Morgan and Krueger’s (1993) observations are particularly pertinent to this study, as they specifically mention academics in this context, believing that the interactions in a focus group can be a powerful means of exposing academics to the reality of students, whose language and logic may be removed from their own.

The third circumstance is when investigating complex behaviour and motivations. Fox (2006) highlights the value of focus groups over individual interviews as being the enabling of a semi-natural conversation to take place between the participants. Comparison of the different points of view expressed can allow researchers to examine motivation with a degree of complexity not available with other methods. Morgan and Krueger (1993) explain how the interaction between members of a focus group enables the participants to identify the extent to which others’ views fit their own and so to better express their own views and feelings. In addition, they can become aware of considerations they had not previously thought about. For this study, it was anticipated, as a result of the literature search, that complex behaviour and motivation would be revealed and that this could be best achieved using focus groups.

Reasons suggested by Litosseliti (2003) for using focus groups and considered pertinent to this study, include obtaining a number of different perspectives on the same topic, gaining information about participants’ views, attitudes, beliefs, and motivations in relation to a topic and examining participants’ shared understandings of aspects of their lives.

Smithson (2008) notes that focus groups allow researchers to observe a large amount of interaction on a specific topic in a short time and that they present a more natural environment than that of an individual interview, because participants are influencing and influenced by others, just as they are in life. They provide researchers with direct access to the language and concepts participants use to structure their experiences and to think and talk about a designated topic. These points all suggest focus groups to be apposite for this study.

2.4.2.3 Limitations of focus groups

Whilst, for the reasons outlined above, focus groups can be a useful qualitative data collection tool, Litosseliti (2003) points out that there are some limitations to using them.
The first is the possibility of manipulation if the moderator encourages participants to respond in a particular way, or the presence of bias if participants say what they think the moderator wishes to hear, rather than what they truly believe. There is also the danger of participants with strong personalities dominating the discussion, whilst the views of quieter individuals are not heard. Data may also be distorted by individuals who disagree with a view being reluctant to say so, or by the fact that focus groups sometimes generate more emotion within the group than is actually felt by any of the individuals.

2.4.2.4 Focus group participants

2.4.2.4.1 The ideal number for a focus group

Opinions about the appropriate number of participants in a focus group vary from as few as 4 to as many as 12. According to Krueger and Casey (2000), there are typically 5 to 10, but 4 to 12 is acceptable. Morgan (1998) states that a typical focus group size is 6 to 10 participants, and Hancock, Ockleford and Windridge (2007) believe focus groups work well with approximately 8 people. Greenbaum (1998) distinguishes between focus groups with 4 to 6 participants, which he refers to as ‘minigroups’, useful for producing in-depth data and ‘full groups’ of 8 to 10 people.

As the interactions between participants are a particularly distinctive characteristic of focus methodology (Smithson, 2008), what is important is to have enough people to generate discussion without having so many that some people feel ‘crowded out’. In larger groups, there is the possibility that some participants will remain silent or speak very little, while smaller groups, say 4 to 8 participants, often provide an environment where all participants play an active part in the discussion. Whilst opinions about the ideal number of participants vary, as Krueger and Casey (2000) observe, the focus group must be small enough for everyone to have an opportunity to share insights and yet large enough to provide diversity of perceptions.

Following consideration of the authors’ opinions above, the decision was made by the research team to recruit approximately 8 participants in each focus group, with 6 to 10 being considered appropriate.
2.4.2.4.2 Sampling for focus groups

Smithson (2008) suggests that many variables may need to be taken into consideration when selecting participants for focus groups, such as nationality, sexuality and ethnic background. In the opinion of Fox (2006) however, it is not feasible to select a representative sample in qualitative research in the same way as in quantitative research, as the sample will usually be too small. According to Smith (2002), purposive sampling is commonly employed when recruiting focus group members, participants being selected because they share characteristics relevant to the study. Litosseliti (2003) similarly believes that focus groups should be made up of people with common characteristics and similar levels of understanding of a topic, rather than the researcher aiming for diversity, although he cautions that too much homogeneity in a group could result in fewer diverse opinions and experiences. Morgan (1998) points out that having homogeneous and therefore, compatible participants, who perceive themselves to be fundamentally similar to one another, obviates the need for them to explain themselves, rather than discussing the issues of the focus group. Krueger and Casey (2000) believe one should avoid mixing people who may feel they have different levels of expertise or power related to the issue, as all participants should feel comfortable saying what they feel or think.

Students on the MPharm degree course at the University of Portsmouth have such a wide variety of nationalities, ethnic backgrounds, educational experiences and religious and cultural differences, it would be impossible to represent them all within a focus group of 6 to 10 students. It is also debatable which, if any, of such characteristics would influence their engagement with lectures. What would potentially be interesting would be to include students who do, in the main, attend and engage with lectures and those who do not. The obvious problem with such a recruitment strategy, in the absence of attendance registers, is identifying those students. Even if that information were available, it might prove difficult to persuade students who do not attend lectures to attend a focus group about engagement with lectures.

In the belief that the most important feature of the groups was that the participants had all experienced MPharm lectures at the University of Portsmouth and that, by volunteering to participate in a focus group, they had indicated that they were eager to discuss their experiences, a combination of opportunistic (convenience) and snowball sampling was employed. The 4 student members of the research team all undertook to recruit students
from one year of the MPharm course. MPharm students from the respective years were approached on their way to and from teaching sessions and asked to participate in the research. Those students expressing a willingness to do so were provided with details of the date, time and venue for the focus group and a written explanation of the research (Appendix 1). They were also informed that they would be required to sign a consent form. (Appendix 2). The student researchers exchanged mobile phone numbers and email addresses with the potential focus group participants and informed them that they could withdraw from the study at any time. The volunteers were then asked if they knew of other students who might also be interested in participating in the focus groups, until 10 students had agreed to attend.

2.4.2.4.3 Encouraging attendance at focus groups

One of the most common problems with focus groups, as highlighted by a number of authors, is that scheduled participants do not attend on the day (Morgan, 1998; Smithson, 2008; Krueger & Casey, 2000) and it is both frustrating and embarrassing to go to the considerable effort of organising the event and then have only 3 people attend. A solution to this problem is to ‘over-recruit’, to be more certain of having enough attendees. Wilkinson (2004) suggests over-recruiting by as much as 50% to ensure sufficient people turn up, whereas Morgan (1998) suggests just one or 2 extra participants should be recruited. For this study, where the decision had been taken to aim for 8 participants with a minimum of 6 and maximum of 10 being considered acceptable, 10 potential participants were recruited for each of the 4 focus groups.

Tips offered by Morgan (1998) and Krueger and Casey (2000) to encourage participants to attend focus groups include setting meeting dates, times and locations that are convenient for the participants, making personal, direct contact with potential participants, conveying to them the importance of the focus group, making a reminder phone call the day before and offering incentives. For this study, participation was not demanding for members in terms of travel and associated expenses, as the focus groups were held during the afternoon in a university building where the students were already present for morning teaching sessions. The focus groups were however, all held on Wednesday afternoons, which is a ‘free afternoon’ for students, so participants were required to give up time they might otherwise have devoted to working or playing sport. Consequently, it was felt that the offer of an incentive in the form of a £10 gift voucher, of each participant’s choice, was
appropriate to motivate students to attend. The student members of the research team maintained regular contact with those who volunteered to participate until the day of the focus group.

2.4.2.5 The number of focus groups required
As Morgan (1998) says, there is no hard-and-fast rule about how many focus groups are enough. The important thing is not to have too few groups so that something important is missed or premature conclusions drawn, but not to waste time and money conducting too many. Whilst the exact number of groups needed depends on the diversity of what participants have to say, Morgan (1998) states that the typical number of focus groups needed is 3 to 5. Knodel (1993) recommends a flexible approach with the number of groups to be held being decided upon as the work progresses. As Wilkinson (2004) says, for some projects, it may be sufficient for a single group to meet on just one occasion. Morgan (1998) points out that there is a diminishing return for each additional focus group and what is important is to reach the point of repetition, where no new information is being provided, known as ‘theoretical saturation’ or ‘data saturation’. Greenbaum (1998) similarly warns against implementing more focus groups than are necessary in order to achieve research objectives.

The decision for this study was to conduct one pilot focus group and then, if the pilot did not reveal the need for a large number of changes, to conduct a further 4 focus groups, one representing each year of the MPharm student cohort. The decision would then be made to conduct further focus groups, should analysis of the data suggest that data saturation had not been reached. Following the completion of the 4 scheduled focus groups, held during November and December 2009 and January 2010, it was believed that data saturation had been achieved and no further focus groups were required.

2.4.2.6 Conducting focus groups
2.4.2.6.1 Deciding how focused a focus group should be
The degree of focus in a focus group rather depends on whether the aim is to centre on topics provided, or for participants to pursue their own directions, or if a balance between the 2 is desired. If the goal is to answer pre-determined questions, a more structured topic guide and approach must be used. If however, it is not even known what the right questions are, a less structured approach is more appropriate. Not just the topic guide but also the
moderator style should be appropriate for the degree of focus. In a less structured focus group, the moderator can be more flexible, giving the group the freedom to pursue its own interests whereas, in a more structured group, the moderator needs to exercise tighter control over the group’s dynamics, keeping the discussion focused on the topic in hand. (Morgan, 1998). For this study, a number of research questions had been formulated and the researcher was eager to answer these questions, whilst not limiting the scope of the data to be collected. To this end, a semi-structured topic guide was employed. (Appendix 3).

2.4.2.6.2 Moderators

In market research, moderators tend to be specifically trained for the task, whilst in social science, researchers often moderate the groups themselves. In this study, the 4 student researchers participating in the research project acted as moderators and moderators’ assistants. They were given instruction and training by the main researcher, prior to the focus groups, and all practised both roles during the pilot focus group.

Fox (2006) describes one of a moderator’s first tasks when facilitating a focus group as being to introduce the participants to one another but, in the case of this study, because the participants were, for each focus group, students in the same year of the MPharm course, little introduction was necessary. The moderating team did however make the decision to use an ‘ice breaker’ question at the start of the focus group session, to put the participants at their ease.

Another task for moderators is to inform participants of how long the focus group is expected to last. (Hancock, Ockleford & Windridge, 2007). In this case, based on the pilot study, it was explained to the participants that the discussion would probably take between one and one and a half hours and this proved to be the approximate duration of each of the focus groups.

During the focus group session, moderators’ tasks include ensuring that all the essential topics are covered in the time available, that discussion is between participants, rather than between them and the moderator, that all group members are given the opportunity to speak and that participants do not shift away from the topic of discussion. They should also deal with disagreements or arguments in the group, should they occur. (Smithson, 2008;
Litosseliti, 2003). Whilst the moderators followed a semi-structured moderator’s guide, they had the freedom to gather more in-depth answers by asking additional questions if they felt this was needed. As Fox (2006) states, however, moderators should not see themselves as interviewers and their objective should be to keep the discussion on topic, whilst saying as little as possible.

Participants must feel comfortable with the moderator and Krueger and Casey (2000) believe that a moderator’s respect for participants may be one of the most influential factors affecting the quality of focus group results. The moderator’s background and relationship to the participants will affect how the participants view the moderator and as Litosseliti (2003) states, consideration may need to be given to the moderator’s age, socio-economic class and professional status in relation to that of the participants. The moderators in this study were final year MPharm students and the focus group participants, members of all years of the degree course. It was felt that as the moderators were colleagues of the participants, with similar experiences to their own, the participants would feel more comfortable with them than if the main researcher, who had taught the participants, acted as a moderator.

Moderating requires the ability to listen and the self-discipline to control one’s personal views (Krueger and Casey, 2000) and moderators with a personal commitment to the topic need to be careful to keep their views to themselves (Davies, 2007) to avoid introducing bias into the discussion. (Fox, 2006). The need for moderators to focus on understanding the perceptions of the group participants was particularly pertinent to this study, where the moderators were MPharm students, who had shared experience of MPharm lectures with the focus group participants and they were, therefore, conscious of the need not to voice their own views or influence participants during the focus groups.

Litosseliti (2003) observes that an effective focus group moderator needs to be confident and flexible and have good personal, interpersonal, communication and managing skills, whilst being a non-judgemental listener. As he says, the role of the moderator is both complex and challenging.

Krueger and Casey (2000) and Morgan (1998) advocate the use of a moderating team consisting of a moderator and an assistant moderator. Tasks can then be shared, the
moderator being primarily concerned with directing the discussion, keeping the conversation flowing and taking a few notes, whilst the assistant takes more comprehensive notes and deals with logistical arrangements, such as refreshments, seating and the audio recorder. Litosseliti (2003) also advocates the use of an assistant moderator, describing the role as invaluable in focus group research.

Litosseliti (2003) further recommends using the same moderator for the whole series of focus groups as this negates the problem of different moderating styles being used, which may affect the generation of data and make analysis more difficult. For this study, the research team included 4 students who were available for all the focus groups so the same people acted as moderators and assistant moderators for all the focus groups.

2.4.2.7 The focus group room layout
Fox (2006) suggests that it is preferable to seat participants around a table. In this study, for the pilot focus group, participants, moderators and moderators’ assistants were seated around a long table, with the video recorder at one end and the audio recorders on the table. As a result of feedback from the participants and reflection and discussion following the focus group, it was decided not to use the video recorder (more detail is given later) and the participants felt that the presence of the table was too formal and acted as a barrier to the flow of conversation. For the subsequent 4 focus groups, therefore, participants and the moderating team sat on chairs in a circle, with small tables in the centre to accommodate the audio recorders. (See seating plans at Appendix 4).

2.4.2.8 Refreshments
Eating together tends to promote conversation and communication within a group and most focus groups use snacks, although full meals can be provided, but this needs a deal of planning. (Krueger and Casey, 2000). Hancock, Ockleford and Windridge (2007) suggest providing refreshments as participants arrive, to act as an ‘ice-breaker’ and allow people to meet each other before the focus group discussion begin. For this study, a variety of hot and cold drinks, biscuits and fruit were provided for participants before the focus groups started.

2.4.2.9 Questions and focus group guides
As Krueger (1993) says, the nature and sequence of questions may be the most distinctive feature of focus group meetings. He believes that quality focus groups depend on quality
questions. Krueger also believes quality is affected when too many questions are used in a focus group meeting. He recommends about 10 to 12 questions as being adequate for a 2-hour focus group. Testing the guide on a pilot group is highly recommended by Smithson (2008). Rubin and Rubin (1995) point out that as the research progresses and the researcher begins to learn how the interviewees understand their world, it may be necessary to rethink the pattern of questioning, rather than persisting with a design that does not allow pursuance of an unexpected insight. For this study, the original focus group topic guide was modified after the pilot focus group, to facilitate a more natural flow of conversation. (See focus group topic guide at Appendix 3).

2.4.3 Individual (one-to-one) interviews
The differences and similarities between focus groups and individual (one-to-one) interviews, both from the perspective of aspects of their organisation and conduct and as regards the nature of the conversation that takes place, have already been discussed.

As in the case of focus groups, individual interviews cover a spectrum from the highly structured, using a precise interview schedule that the interviewer has to follow closely, to unstructured interviews where the interviewer has only decided in general terms on the main themes and topic areas to be explored. Structured interviews, often based on closed questions, produce simple, descriptive information very quickly and may be used as a precursor to more open-ended discussions, whereas unstructured interviews that use open questions produce a wealth of qualitative data that can generate insights into people’s understanding of their social world. (Arksey & Knight, 1999; Fox, 2006).

Perhaps the commonest form of interview is the semi-structured interview that, in a similar way to focus groups, falls between the structured and unstructured format. These interviews also generate qualitative data but the interviewer does have a specific agenda to follow and will have selected beforehand the relevant topic areas and themes to pursue. This type of interview is loosely structured around an interview guide containing key, open-ended questions, which gives the interviewer the freedom to seek elaboration from the interviewee on a response, or to discuss in more detail a line of enquiry introduced by the interviewee. (Arksey & Knight, 1999; Hancock, Ockleford & Windridge, 2007; Fox, 2006).
For this study, as in the case of the focus groups, a semi-structured interview topic guide was used, which reflected the research questions of the study and was related to the topic guide used in the focus groups. (See Appendix 7). Points of interest raised by interviewees were probed more deeply by the interviewer.

According to Greenbaum (1998), individual interviews usually last between 30 and 90 minutes, with the average being 45 minutes. The interviews conducted for this study lasted between 40 and 90 minutes.

2.4.3.1 Sampling for interviews
The view of Arksey and Knight (1999) is that in qualitative interviewing, sampling is an exercise of judgement that balances practical concerns such as time, money and access with the focus of the research. Their advice is to try and get a sample that allows the researcher to see the research topic from all relevant perspectives. Davies (2007) suggests that between 6 and 20 interviews might be needed but, as with focus groups, interviews should be conducted until data saturation is perceived to have been achieved. As Fox (2006) says, when an interview uncovers no new meanings, enough interviews have been conducted. In this study, 2 pilot interviews were conducted, to enable refinement of the interview topic guide (Appendix 7) and a further 10 interviews were ultimately conducted, at which point it was concluded that data saturation had been achieved.

All the interviewees in this study were lecturers (academics) who taught MPharm students at the University of Portsmouth. Fox (2006) recommends that the aim of sampling for individual interviews should be that participants should represent different categories within a setting. The researcher considered it was important to include within the lecturers interviewed, both sexes, a range of ages and years of teaching, and experience of teaching across all the disciplines pertaining to pharmacy.

2.4.3.2 Arranging and conducting the interviews
As mentioned earlier, the interviewer and all the interviewees worked in the same university, so there were no issues relating to travel distances and times, and the interviews were conducted during the vacation periods in 2009 and 2010, when the interviewees were not teaching and, therefore, had more discretionary time than during term time. Lecturers were contacted by telephone, by email or personally and, if they agreed to be interviewed, a
convenient time was organised. Interviewees were then provided with an explanation of the research and a consent form (Appendices 5 and 6). The interviews were conducted in the office of either the researcher or the interviewee, at the interviewee’s choice.

2.4.3.3 Topic guides for individual interviews
The same principles regarding the degree of structure in the interview apply to individual interviews as apply to focus groups. As mentioned above, a semi-structured interview guide was constructed for the individual interviews, with the aim of enabling the interviewer to ensure that the key areas of interest to the research project were all covered.

2.4.4 Recording interviews and focus groups
As Fox (2006) explains, it is normal to audio record interviews, rather than attempting to record them on paper, primarily because attempting to write down an abbreviated version of what participants say tends to lead to errors and omissions in the record. It is important however, to obtain consent from participants in advance of the interviews, to use video or audio recorders. In this study, permission to record both the focus groups and individual interviews was included in the interview consent form.

Morgan (1998) suggests careful thought is given to whether or not to video-record focus groups, as any benefits in depicting the discussion can be offset by its effects on the quality of the discussion. In this study, a video recorder was used for the pilot focus group, the intention being to use the video to identify who was speaking in case this was difficult to do using the audio recording alone, and also as a back-up for the audio recorder. It was found however, that the audio quality of the video recorder was too poor to be of use and it was difficult to identify speakers because of the small size of the video screen. Additionally, it was felt by the researchers that the participants were inhibited by the obvious presence of the video recorder, whereas they appeared unaffected by the small, discreet, audio recorder. This concurs with the experience of Fox (2006) who comments that video recorders are unlikely to be worth the hassle of setting them up because they can inhibit the respondents.

As a result, the decision was made by the research team to abandon the idea of using a video recorder, but to use 2 audio recorders, as insurance against technical difficulties, and for the moderators to make notes enabling speakers to be identified, if required. The
recordings were downloaded to and stored on computers using Microsoft DSS Player. The interviews were recorded using a single audio recorder and stored in the same way as the focus group recordings.

2.4.5 Transcription

Litosseliti (2003) discusses the decision of whether to transcribe complete interview discussions or to use abridged transcripts for analysis. He believes that full transcripts, whilst difficult and time-consuming, are usually more rigorous and productive. Lacey and Luff (2007) believe that unless full transcriptions are made, the researcher is likely to introduce bias by including only those sections they perceive as being relevant or interesting at the time. For these reasons, in this study the recordings were all transcribed in full.

Hancock, Ockleford and Windridge (2007), Krueger and Casey (2000) and Lacy and Luff (2007) all estimate the time required to transcribe interviews as from 4 to 6 hours or more per hour of interview, depending on the speed of the typist. These estimations proved to be correct as each of the focus groups for this study was between one and one and half hours long and the transcription took approximately one working day for each one. The interviews took slightly less time to transcribe as only 2 voices were involved.

Krueger and Casey (2000) discuss the relative merits of researchers undertaking their own transcription or using a professional transcriber. Clearly there are considerable costs associated with the use of a professional transcriber but, as the authors point out, this may be more cost-effective than the work being carried out by the researcher who may be more highly paid and a slower typist. There are, however, perceived advantages of researchers performing their own transcription. As Hancock, Ockleford and Windridge (2007) and Litosseliti (2003) highlight, transcribing the data can help the researcher to become familiar with and immersed in the data and begin to understand the content and flow of the talk, the group dynamics, and how the data will answer the research question(s). As Braun and Clarke (2006) observe, some qualitative researchers see transcription as a key phase in data analysis.

In this study there was both a lack of funding for transcription and a desire to exploit the opportunity to begin data interpretation as early as possible. As a result, the 4 MPharm students who formed part of the research team each transcribed one focus group and the
main researcher additionally transcribed all 4 focus group recordings. All the interviews were transcribed by the main researcher alone.

As Hancock, Ockleford and Windridge (2007) highlight, a larger proportion of the message people convey is communicated by the way they speak than in the words they utter and this should be taken into account when transcribing interviews and focus groups, a point reiterated by Lacey and Luff (2007). With this in mind, the conversations were transcribed verbatim, including ‘ums’ and ‘ers’ and using features such as underlining or bold text to signify emphasis on the part of the participant. Notes were made of laughter, sounds of agreement or disagreement by other participants in the focus groups and participants interrupting or speaking over one another. Pauses were also indicated in the transcripts.

The recordings were downloaded to and stored on computers using Microsoft DSS Player. The transcriptions were made using a transcription set, consisting of a foot pedal and headphones. The recordings were typed into Microsoft Word and the transcripts printed using wide margins, double line spacing, page numbers and line numbers, to facilitate analysis.

2.4.6 Pilot interviews

The main reason for conducting pilot interviews, according to Fox (2006) is to ensure that the topic guide includes all the relevant questions and highlight any omissions. He suggests piloting interviews with respondents similar to those in the study sample.

For this study, the pilot focus group participants were MPharm students in the final year of the degree course who were not participating in the focus groups for the study and the interviewees for the pilot individual interviews were 2 academics who were not included in the study sample.

Litosseliti (2003) lists additional reasons for piloting focus groups, such as illustration of some of the likely interaction that will occur, judging whether questions will be understood and their relative effectiveness, reflecting on the role of the moderator, and testing the practical aspects of the focus group, such as the room arrangement, seating positions, quality of recordings and participants’ reactions to being recorded. As discussed above, many of these aspects were taken into account during the pilot focus group for this study.
2.5 Analysis and interpretation of qualitative data

Rubin and Rubin (1995) describe the analysis of data from interviews as the final stage of listening to hear the meaning of what is said. They believe that data analysis is exciting because it is a journey of discovery but that it can also seem daunting because of the sheer volume of data, a point also made by Arksey and Knight (1999), who describe the analysis of interview data as both demanding and time consuming. Rubin and Rubin (1995) estimate that each hour of interviewing will generate approximately 10,000 words of data.

Davies (2007) cites a number of key factors to bear in mind whilst undertaking qualitative data analysis. They include being aware of and reminding oneself of the aim of exploring people’s perspectives and gaining in-depth understanding of participants’ experiences and feelings, and taking account of secondary ideas that may arise, whilst constantly returning to the original research questions to ensure that one’s thoughts have not become too detached from them.

2.5.1 Thematic analysis

Davies (2007) defines thematic analysis as the study of the social meaning of tape-recorded conversations, described by Boyatzis (1998) as a process for encoding qualitative information. Boyatzis (1998) asserts that thematic analysis is not a method in its own right but rather a process that can be used with most qualitative methods, across the spectrum of approaches, from theory-driven to data-driven. This point is also made by Braun and Clarke (2006) who perceive that thematic analysis can be an essentialist or realist method for describing data in rich detail, a constructivist method interpreting various aspects of the research topic, or a contextualist method sitting between the 2.

The process of analysing interview data, according to Rubin and Rubin (1995), should begin whilst the interviewing is still underway. They suggest concepts and themes should be identified in the data after each interview and that this continuing analysis enables the researcher to refine the topic guide for subsequent interviews. Arksey and Knight (1999) also refer to informal analysis taking place during the data collection stage and suggest that the topic guide should be adjusted if previously unforeseen issues arise. Davies (2007) too, recommends noting between interviews any new issues that one may wish to explore in
subsequent interviews. He believes the key to good focus group analysis is to recognise that it is not a distinct stage, but is interwoven with the data collection.

Braun and Clarke (2006) list 6 stages to the process of thematic analysis – familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing a report. This summarises the process used to analyse the qualitative data in this study.

2.5.1.1 Familiarisation with the data
The process of familiarisation with data through transcription has already been discussed. Following this, Braun and Clarke (2006) recommend repeated reading of the data whilst consciously searching for meanings and patterns. Whilst acknowledging that this stage may appear time-consuming and there may be a temptation to skip over it, they strongly advise against that, viewing this stage as the bedrock of the analysis. Lacy and Luff (2007) similarly describe familiarisation as an essential stage of analysis.

2.5.1.2 Coding the data
Coding is described by Rubin and Rubin (1995) as the process of grouping interviewees’ responses with similar ideas or concepts and they suggest the first stage should be to identify the main codes suggested both by the initial reading of the data and by the intended outcome of the research. As Lacey and Luff (2007) say, the researcher may have a priori concepts to be used as codes, possibly from existing literature. Braun and Clarke (2006) also recommend that coding begins during the data reading stage and, in essence, continues throughout the analysis. Pope, Zeibland and Mays (2000) believe that continuous analysis is almost inevitable in qualitative research when the researcher is ‘in the field’, collecting data, and it would be impossible not to think about what has been heard.

Hancock, Ockleford and Windridge (2007) and Knodel (1993) recommend that a code should be a few words used to summarise a short section of data. Boyatzis (1998) describes a code as the most basic segment, or element, of the raw data that can be assessed in a meaningful way. He suggests it should be clear and concise, close to the data and act as a label. Braun and Clarke (2006) recommend coding for as many patterns as possible and coding inclusively, that is, retaining a little of the surrounding data, so that context is not lost.
Knodel (1993) recommends that initial coding should correspond to each item in the focus group guide, with additional codes allocated to topics that were not included in the interview guide, a view also held by Litosseliti (2003) and this process was used in the analysis of data in this study.

2.5.1.3 Formulation of themes

According to Boyatzis (1998), a theme is a pattern found in information which may, in its simplest form, describe and organise observations, in its most complex form, interpret aspects of the phenomenon under investigation, or may be something between the two. A theme is described by Braun and Clarke (2006) as capturing something important in relation to the research question(s) and representing a level of patterned response or meaning. Ryan and Bernard (2003) purport that themes may come either from the data (an inductive approach) or from prior understanding of the phenomenon under study (an a priori approach), although they allow that even with a fixed set of open-ended questions, it is not possible to identify all the themes before analysing the data.

Rubin and Rubin (1997) describe the organisation of data into themes as the final stage of analysis that provides a description or explanation of the topic under investigation which can then be interpreted in terms of previous literature and theories in the field of research. They further describe the building of overarching themes, the pulling together of individual themes to build an integrated explanation. Ryan and Bernard (2003) refer to identification of overarching themes as ‘metacoding’ to produce ‘metathemes’.

Braun and Clarke (2006) discuss the level of prevalence a theme should have to justify being a theme. They believe a theme’s ‘keyness’ is not a question of how many times it appears in the data, but rather one of whether it captures something important in relation to the research question(s) and they suggest that researcher judgement must determine what constitutes a theme.

For this study, both an a priori approach, based on the topic guide and an inductive approach were utilised to formulate themes and metathemes from the qualitative data.
2.5.1.4 Finalising the analysis

Braun and Clarke (2006) suggest 2 further stages of analysis before a report is produced, reviewing themes and defining and naming themes. The first stage involves refinement of the initial themes, including rejection of some themes, coalition of themes, or splitting of themes. They suggest that at the end of this stage, the researcher should have a good idea of the overall story the themes tell about the data. Defining and naming themes means identifying the essence of what each theme is about and determining what aspect of the data is captured by each theme. They believe it is necessary to consider each theme itself and each theme in relation to others. Theme names, Braun and Clarke (2006) suggest, should be concise and punchy and give the reader an immediate sense of what the theme is about.

2.5.2 Considerations particular to qualitative analysis

Things to be considered and taken account of, recommended by Litosseliti (2003), include not only the issues, ideas and themes in participants’ comments but also consistencies and inconsistencies in participants’ comments and arguments, shifts in opinion, vague versus specific comments, the context of comments, tone and intensity of speech and the balance of positive and negative comments about a topic or idea. Rubin and Rubin (1995) advise that all the material from each theme identified should be brought together and studied to find any variations and nuances, and that comparisons should be made to discover connections between themes. This was all deemed by the researcher to be sound advice, which was heeded when analysing the data.

Litosseliti (2003) reminds researchers that the purpose of focus groups is not to make inferences but to understand; not to make generalisations, but to provide insights into people’s perceptions.

Braun and Clarke (2006) list several potential pitfalls of which thematic analysts should be aware. These include not performing rigorous analysis but rather, just stringing together data extracts with no analytic narrative; only using the topics from interview schedules as ‘themes’; weak or unconvincing analysis with overlapping or inconsistent themes; a mismatch between the data and the analytic claims made about it and analysis which fails to state its theoretical assumptions or clarify how it was undertaken.
2.6 Quantitative data collection and analysis methods

2.6.1 Correlation between attendance at lectures and progression rates of students

The original data relating to MPharm lecture attendance and to the progression of students, collected during the academic year 2007-8 within the School of Pharmacy and BMS, had been entered on to Microsoft Excel spreadsheets. Some reorganisation of the data was required to make the 2 sets of data compatible and pivot tables were then utilised to produce scatter plots, with trend lines, for each year of the MPharm course. Analysis of variance using Microsoft Excel ANOVA was performed for each year’s data, to compute the correlation coefficient (R) and R² values. In order to investigate in more depth, the correlation between the 2 variables, 3-dimensional (3-D) plots (see below) were constructed.

2.6.2 Scatter plots

A scatter plot (also referred to as a scattergram or scatter diagram) is a graphical representation of the nature and strength of the relationship between variables. Robson (2002). For this study, Microsoft Excel was used to produce scatter plots of student attendance against their progression as a result of end of unit examination marks and trend lines were calculated for each MPharm year.

2.6.3 Correlation coefficients

A correlation coefficient is a mathematical measure of how much one variable can be expected to be influenced by changes in another. Several correlation coefficients exist and all provide a measure of linear correlation, but the most commonly used is the Pearson correlation coefficient (represented by the letter R), which was employed during the study, in the investigation of whether lecture attendance affects students’ exam performance.

Perfect, positive, linear correlation between 2 variables produces a correlation coefficient of +1 and perfect, inverse correlation, a correlation coefficient of -1, whilst a correlation coefficient of zero indicates that the 2 variables are unrelated. Values between zero and 1 indicate increasingly strong correlation between the 2 variables.
2.6.3.1 Illustration of various degrees of correlation

By way of illustration, the following scatter plots (charts 2.1 to 2.6) have been formulated, using a random number generator in Microsoft Excel, to show a variety of correlation coefficients.

Almost no correlation between x and y

\[ R = 0.06 \]

Chart 2.1, showing very little correlation between variables plotted on an x-y scatter plot.

The random scatter of points on the plot suggests little or no correlation between x and y, as indicated by the very low R value of 0.06.

Some correlation between x and y

\[ R = 0.56 \]

Some inverse correlation between x and y

\[ R = -0.70 \]

Chart 2.2, showing positive and inverse correlation between variables plotted on an x-y scatter plot.

Here there is less visible scatter, with the points on the x,y plot appearing closer to the trend line and a degree of correlation is indicated by the R value of 0.56 on the left, and of inverse correlation where the R value is -0.70, on the right.
Chart 2.3, showing greater positive and inverse correlation between variables plotted on an x-y scatter plot.

Here there is much less visible scatter, with the x,y points situated closer to the trend lines and this is reflected in the correlation coefficients of 0.90, indicating strong, positive correlation, on the left, and -0.89, showing strong, inverse correlation, on the right.

Chart 2.4, showing perfect positive and inverse correlation between variables plotted on an x-y scatter plot.

This chart shows perfect x,y correlation (on the left) and inverse correlation (on the right), with all the points situated on the trend line. Robson (2002) points out that perfect correlation between 2 variables is unlikely when researching variables associated with people’s behaviour.
The strength of correlation between 2 variables is seen as the closeness of the plotted points to the trend line and is independent of the angle of the trend line, unless there is zero correlation. This is further illustrated in Charts 2.5 and 2.6 below.

Chart 2.5, showing perfect positive and inverse correlation (R = 1, or -1, in all cases).

**No correlation between x and y**

$R = 0$

Chart 2.6, showing no correlation between x and y (R = 0).

Here, although the trend line passes through all the x,y points, there is no correlation between x and y, as the value of y remains constant whilst that of x varies.
2.6.3.2 Correlation coefficients and statistical significance

The statistical significance of correlation coefficients, such as the Pearson correlation coefficient used in this study, is often computed but, as highlighted by Robson (2002), the value of correlation coefficient that appears to indicate statistical significance varies widely, depending on the sample size, and may not indicate the true importance of the correlation. He points out by way of example that, with a sample size as large as 500 pairs, it is possible to achieve ‘statistical significance’ using a t-test, when the correlation coefficient is only 0.1 whilst, with a sample size of 20, to achieve the same statistical significance, the correlation coefficient would need to be 0.44.

2.6.3.3 Limitations of correlation coefficients

In 1973, the statistician F.J. Anscombe highlighted that the Pearson correlation coefficient alone cannot completely characterise the relationship between 2 variables and illustrated his point with a quartet of scatterplots. All have similar correlation coefficients, but it can be seen that the relationship between the 2 variables is very different in each case.

Chart 2.7 - Anscombe’s quartet of scatter plots.
Example I illustrates what might be expected when the variables are normally distributed and correlated, though not perfectly. In Example II, a curvilinear relationship is seen, but the Pearson correlation coefficient can only approximate the relationship to a linear one. In Example III, the relationship between the variables is perfect, except for one outlier which reduces the correlation coefficient from 1 to approximately 0.8. In Example IV, a single outlier produces a high correlation coefficient, even though the relationship between the variables is clearly not linear.

Anscombe (1973) argued therefore, that it was necessary to examine the data closely, by means of graphs, rather than relying on correlations coefficients alone. As Tufte (2001) says, graphs can be more precise and revealing than conventional statistical computations.

2.6.4 Three dimensional (3-D) charts
It can be difficult to visualise from a scatter plot, the frequency of occurrence of an observation at any particular XY point and Microsoft Excel provides the option of viewing the data in 3 dimensions (3-D). Most of these 3-D charts have a false third dimension and portray the data as if it were drawn on a board, cut out and then viewed at an oblique angle.

Both 2 dimensional scatter plots and 3-D charts were constructed when examining the relationship between students’ attendance at lectures and their subsequent progression.

2.6.5 Interventions made following monitoring of lecture attendance
Sixty six students, with lecture attendance rates of less than 60% at lectures where registers were taken, were interviewed by the Head of School or Deputy Head of School, towards the end of semester 1, to stress the importance of attending lectures and the possible impact on their progress of missing so many learning opportunities. Letters regarding the students’ poor attendance were sent to their home addresses, and copies placed in their personal files.

Anecdotally, the intervention made little difference to the rate of lecture attendance of the students concerned. In order to ascertain the impact of the interventions in more detail, the students were first grouped into those who had improved as a result and those upon whom the interventions had no effect or whose lecture attendance was lower in semester 2 than in semester 1. These results were then plotted on ladder plots to illustrate the differences in
lecture attendance of each student before and after the interventions. To ascertain if the difference between the 2 groups was statistically significant, a paired t-test was used to compare the means of the students’ lecture attendance rates before and after the interventions.

2.7 Scoping exercise

In order to put the situation at the University of Portsmouth School of Pharmacy and BMS into context with other schools of pharmacy, a scoping exercise was undertaken, using a short postal questionnaire addressed to the heads of all the Schools of Pharmacy in the UK. (Appendix 9). An explanatory letter was included. (Appendix 10).

The advantages of postal questionnaires cited by Frankfort-Nachmias and Nachmias (1996) that are relevant to this research include wide geographical contact at minimum cost, reduction of possible biasing error due to the interaction between the interviewer and the respondent, and time for respondents to consider their answers. The same authors also discuss the disadvantages, such as the requirement for simple, easily understood questions and instructions and the lack of opportunity for probing or clarification by the researcher. As the questionnaire was used for a relatively simple scoping exercise, it was not considered that these factors would be problematic. The possibility of a low response rate was of more concern and the decision was made to send out reminder letters and further questionnaires to non-responders, if necessary, in an attempt to improve the response rate.

The quantitative data was recorded on a Microsoft Excel spreadsheet to provide frequency distribution information. The qualitative data was transcribed into a single Microsoft Word document and analysed in conjunction with the data from the interviews and focus groups, using thematic analysis, as described above.

2.8 Rigour in research

2.8.1 Reliability

Reliability is described by Denscombe (2007) as being the degree of neutrality of the effect of a research instrument and the consistency of the results it produces on many occasions. In general, quantitative research utilises measurements and analyses that are readily replicable by other researcher, that is, the findings can be verified, so increasing confidence in its objectivity and reliability (Grix, 2004). Whilst in quantitative research, this is more
readily achievable, as the researcher does not usually ineract physically with the subject of analysis, in qualitative research, as Denscombe (2007) points out, the researcher himself is often closely bound up with the research instrument and so the question arises as to whether the finding would have been the same had a different researcher carried out the work.

Denscombe (2007), Lacey and Luff (2007) and Davies (2007) all recommend that researchers report in detail their data collection and analysis, and how critical decisions were made, to demonstrate rigour in their work and to allow others to see to what extent they would have reached the same conclusions.

Knodel (1993) and Boyatzis (1998) both suggest that reliability may be enhanced by a team approach to analysis of focus group or interview data, as comparisons can be made as analysis progresses and, if necessary, findings can be discussed until agreement is reached.

Knodel (1993) further purports that contact with respondents is important in qualitative data analysis and that the accuracy of the interpretation is enhanced when the analysts are intimately involved with the data collection, for example, present at the focus group meetings and even acting as moderators.

2.8.2 Validity

According to Denscombe (2007), validity refers to the accuracy and precision of the data and the appropriateness of the data to answer the research questions or as Arksey and Knight (1999) say, whether or not the researcher is actually investigating what he claims to be investigating. Denscombe (2002) includes in the definition, the accuracy of the explanations offered by the researcher and as this inevitably involves a connection with what is ‘true’ or ‘real’, it is quantitative researchers who have placed most emphasis on the importance of validity. Denscombe (2007) cites Lincoln and Guba (1985) who made the point that it is impossible for qualitative researchers to prove absolutely that they have got it right and that at best they can try and convince readers that the data and findings are reasonably likely to be accurate and appropriate. It is often argued that quantitative enquiry has a clear set of assessment criteria, enabling readers to judge the quality of research easily, whereas qualitative enquiry has no such agreed or easily accessible set of criteria.
As Rubin and Rubin (1995) and Denscombe (2007) say, it can be difficult to tell if an interviewee is telling the truth and when the interview concerns personal emotions, feelings and experiences, it is difficult to check with other people or sources. Denscombe (2007) suggests that data from different interviewees can be checked against one another to see if there is any consistency and that researchers should feel more confident about reporting findings based on a number of interviewees’ views, rather than those of an individual.

Arksey and Knight (1998) propose ways of enhancing validity in interviewing. They recommend using interviewing techniques that build rapport, trust and openness, using schedules that include questions drawn from literature and pilot work and that cover all the key aspects of the research question(s), using samples fit for the purpose of the research, appropriate use of prompts during interviews and allowing sufficient time for interviewing.

Robson (2002) advocates the use of audio recording whenever possible to ensure complete and accurate data recording. He also cautions researchers not to impose a framework or meaning on what is happening, rather than allowing this to emerge from the work. He believes it is plausible to use a prior framework, but this must be subjected to checking of its appropriateness and modified if necessary and the researcher must be able to demonstrate how the final interpretation was reached.

Litosseliti (2003) warns that bias can be introduced during the analysis if the researcher only looks for data that confirm his/her own beliefs and Robson (2002) suggests researchers should actively seek data not consonant with their own theory. Creswell (2003) and Lacey and Luff (2007) advocate presenting negative or discrepant information to the reader to test the researcher’s interpretation and add credibility to the account.

Kairuz, Crump and O’Brien (2007) recommend using several methods of data collection (triangulation – see below) and more than one person examining the data (a suggestion also made by Lacey and Luff (2007)) and ensuring there are no unexplained inconsistencies in the conclusions, as ways of enhancing readers’ confidence in the validity of the research findings.
2.8.3 Generalizability

This, according to Denscombe (2007), is also known as transferability and concerns the ability to apply the findings of the research to other examples of the phenomenon under investigation, rather than them being unique to the particular case used. As he observes, qualitative research is usually based on intensive study of a small number of cases and cannot, therefore, be subjected to tests of statistical significance in the same way as quantitative research findings, where a sample is selected to be representative of the population from which it is drawn.

Denscombe (2007) asserts that whilst a minority of qualitative researchers argue that generalizability is not the business of qualitative research, the majority accept that the issue is relevant, but believe that the consideration should be the degree to which their findings could be transferred to other situations, rather than the extent to which they are likely to exist in other situations. Kairuz, Crump and O’Brien (2007) maintain that not all qualitative research needs to be generalizable to other settings, as its role is often descriptive, but they also quote Guba (1981) as suggesting that data may be generalizable if there is a good fit between the settings. Arksey and Knight (1999) point out that whilst it may be difficult to justify generalizability, that does not mean that no generalization is possible, as the general is always present in the particular.

2.8.4 Objectivity

This is the absence of bias in research which, Kairuz, Crump and O’Brien (2007) suggest, is pivotal to validity. It indicates that the research was conducted using fair and even-handed processes and that it is impartial and neutral in terms of the researcher’s influence on the findings. Davies (2007) asserts however, that qualitative researchers are located in their subject context and cannot lay claim to neutral or scientific objectivity in the same way as quantitative researchers. Denscombe (2007) also believes that qualitative research can never be completely free of the influence of those who conduct it and suggests that qualitative researchers can adopt one of 2 approaches to the issue. The first is to distance themselves as far as possible from their beliefs and to suspend their judgement for the duration of the research. The second is to accept that their identity, values and beliefs affect the outcome of the research, but to make their own experience and social backgrounds clear to the reader.
Davies (2007) makes some suggestions for qualitative researchers to reduce the possibility of introducing bias into interviews. They include presenting oneself in a neutral fashion, but allowing oneself an identity. Davies (2007) believes that interviewees are more likely to be honest and frank with an interviewer if he/she is honest and frank. Other tips are to adopt an accepting position and a non-judgemental attitude, so helping to ensure that no mental, emotional or moral barriers exist between the interviewer and interviewee.

Denscombe (2002) presents the view of some qualitative researchers that all pretence to objectivity should be abandoned and that it should be appreciated that there are many alternative versions of truth and reality, and no logical reason for perceiving any one as superior to others. Social reality is seen as shifting and contradictory, lending itself, therefore, to only short-lived and partial accounts by researchers.

2.8.5 Triangulation

Triangulation, according to Arksey and Knight (1999) serves 2 main purposes: confirmation and completeness. When using triangulation for confirmation purposes, the individual strengths, weaknesses and biases of the various methods must be known and applied in such a way that they counterbalance each other. An example of triangulation being used for completeness is using a quantitative method to put into context the data yielded by a qualitative method.

Arksey and Knight (1999) describe triangulation as using different techniques to explore one set of research questions, that is, data are obtained from a wide range of different and multiple sources, using a variety of methods, investigators or theories. They list 4 types of triangulation - methodological triangulation where a variety of methods is used to collect and interpret the data, data triangulation where diverse data sources are used to explore the same phenomenon, investigator triangulation where different researchers, interviewers or observers are employed and theoretical triangulation where the research is approached with diverse perspectives and hypotheses in mind.

Fielding & Fielding (2008) discuss 2 variants of methodological triangulation - ‘within-method’, where the same method is used on different occasions and ‘between-method’ where different methods are applied to the same subject. They emphasise that it is important to identify in advance the characteristic weaknesses or types of error associated
with the chosen methods, so as to ensure that they are not susceptible to the same threats to validity.

The advantages of triangulation as seen by Arksey and Knight (1999) are that it can increase confidence in research results, strengthen the completeness of a study, address different but complementary questions within a single study, enhance interpretability and contribute to a more nuanced understanding of the focus of a study.

Arksey and Knight (1999) also list disadvantages of triangulation, including that it can be time-consuming, it can be difficult to undertake replicative or comparative studies and it can be tempting for researchers to make inconsistent data sets artificially compatible to produce a more coherent account. The same authors caution that combining results from different analytic perspectives or methods may offer a fuller picture, but not necessarily a more objective or valid one. They state that when theories and methods are combined, the purpose is to add breadth or depth to the analysis and not to indicate subscription to a single and objective truth, that is, accuracy is not increased and triangulation itself is no guarantee of validity or conclusions about which one can be confident. They do perceive however, that it can prompt in researchers a more critical stance towards their data.

In summary, Arksey and Knight (1999) believe that careful and considered use of triangulation can enhance a study but the researcher must consider the purpose of triangulation; whether he/she is seeking confirmation, completeness or both, and that it is important to realise that the extensiveness of triangulation can be constrained by time and resource limits.

2.9 Ethical approval

Ethical approval was granted for this study by the University of Portsmouth BioSciences Research Ethics Committee.
Chapter 3
Results and Discussion

3.1 Introduction

3.1.1 Interviews

Two lecturers who taught MPharm students were interviewed for the pilot interviews, to enable adjustments to be made to the topic guide. The data generated from these 2 pilot interviews was not included in the study as, although both interviewees delivered a small number of lectures to MPharm students, one was a lecturer who taught primarily postgraduate students and the other, primarily foundation degree students.

Ten further interviews with lecturers who taught primarily MPharm students took place. At this point, no new information was being provided and it was concluded that theoretical saturation had been reached. The data from these 10 interviews was analysed, using thematic analysis, as described in Chapter 2.

The number of years the interviewees had worked as university lecturers ranged from 3 years to 25 years. Four of the interviewees were female and 6 were male. The subjects they currently taught, or had previously taught covered all aspects of the MPharm course, including pharmacology, pharmaceutics and various areas of pharmacy practice; underpinning science, such as chemistry maths and biology, and many associated topics such as research methods, communication skills and ethics.

3.1.2 Focus groups

One pilot focus group was conducted, consisting of friends and colleagues of the student research team who acted as moderators and moderators’ assistants for the final focus groups. As discussed in Chapter 2, the pilot focus group enabled modifications to be made to the room layout and the topic guide, allowed testing of the recording equipment, and provided a practice and training session for the moderating team. As with the interviews, the data from the pilot focus group was not included in the study. Four further focus groups, one representing each year of the MPharm student cohort, were conducted. The focus group participants were all current MPharm students at the University of Portsmouth.
and between 8 and 10 participants attended each focus group. Following the 4 focus groups, it was concluded that no further focus groups were required as data saturation had been achieved. The data was analysed in conjunction with the interview data, using thematic analysis.

3.1.3 Scoping exercise
Questionnaires (see Appendix 9) were sent to all 24 Heads of UK SoPs other than Portsmouth and both quantitative and qualitative data were generated from the 17 questionnaires returned. Eleven questionnaires were returned from the first posting, representing a 46% response rate. A follow up posting brought a further 6 responses, resulting in a final response rate of 71%. The data was analysed as described in Chapter 2.

3.1.4 Codes and themes
In accordance with the methods described in Chapter 2, the transcripts from the interviews, focus groups and Scoping Exercise questionnaires were coded, using both an a priori approach, based on the topic guide and an inductive approach to reveal additional codes, as discussed in Chapter 2. The codes were then grouped together to form themes, with constant review, referral back to the transcripts and revision undertaken. Some of the original themes were perceived to be parts of metathemes and as such, were grouped together. Appendix 12 shows the final codes, themes and metathemes, resulting from the analysis, that were used in reporting the findings.

3.1.5 Attendance and progression data
The data from registers taken at 131 lectures during the year 2007-8 was used to construct a Microsoft Excel spreadsheet. Filters and pivot tables enabled description and analysis of the data, as detailed and discussed below. Progression data was available for Years 1 to 3 for the year 2007-8, but not for Year 4, as this had been computed separately and no electronic data had been retained. For MPharm Years 1 to 3, the attendance and progression data were combined, using student references as unique identifiers, and the data was analysed as described in chapter 2.
3.1.6 Presenting the findings

Although there were both male and female interviewees and members of focus groups, the terms ‘he’ and ‘his’ have been used throughout, both for simplicity and to increase the protection of the participants’ identity.

Within the University of Portsmouth School of Pharmacy and BMS, the student year cohorts are variously referred to as levels, stages, years, or MPharm 1-4. For this study, the term ‘Year’ will be used to refer to the student year cohorts.

Rather than presenting the results and accompanying discussion of different stages of the research separately, the findings of the 3 stages of the research have been combined as have the quantitative and qualitative aspects of the study, the aim being to produce a coherent report that addresses the research questions of the study.

3.2 The nature and purpose of a lecture

Both lecturers who were interviewed and students in the focus groups talked about what they believed the nature and purpose of a lecture to be.

3.2.1 Dissemination of information

Lecturers made comments about lectures being primarily a way of disseminating information to a relatively large number of students, in a limited amount of time:

“I think a lecture in its purest meaning would be very much delivery of information….”

“….pharmacy lectures are information loaded and I suppose, being lectures, they should be.”

…..“I’m trying to get across large volumes of information, often in a short period of time, to a large audience.”

“….it’s a way of imparting large volumes of information to a large audience and the most efficient use of time…..”

The traditional view of lectures as an opportunity for students to gain information was discussed in Chapter 1. Some lecturers talked about the need in the pharmacy course, to simply impart facts to students during lectures:

“…. in a fairly hard science discipline like pharmacy, it is necessary to give people some hard facts.”
“....it might be just factual knowledge....”

“It’s mostly factual stuff because that’s just how the course is structured....”

This view accords with that of Charlton (2006) when he refers to teaching ‘tough subjects’ such as natural science and medicine.

Students also described lectures as being about receipt of information:

Year 1: “....it’s just, sort of, this is the information and take it down....”

“The basic words.”

“....exchange of information between a lecturer and a group of people.”

Year 2: “It’s just to administer the information.”

“Pick up information.”

Year 3: “....a way for them to pass a message across to you.”

Year 4: “One person talks, everyone listening....”

“Get more information.”

3.2.2 Introducing topics

Challis, Robinson and Thomlinson (2009) at the University of Sheffield spoke of setting the agenda for a topic and lecturers interviewed similarly believed one purpose of lectures was to provide an introduction or set the scene for a topic or the content of a unit:

“So the main purpose of a lecture then, really, is to set the scene for the topic....”

“So I see it more as a way of introducing them to a particular subject, the key elements that they need to have knowledge of within that particular subject....”

“The purpose of it, I think, is to perhaps introduce a subject area to students, provide a broad overview of that area.....”

The idea of a lecture providing an overview of or an introduction to a topic was not generally raised by students, with just one Year 2 student referring to a lecture as a “guided introduction” and one Year 3 student describing a lecture as “an introduction to it all”.

3.2.3 Acquisition of additional information

Lecturers expressed the belief that the information they provided to students during their lectures should enable them to go away and find out more about the subject matter themselves:
“….leave them with the ability to go away and find out more about the topic and to broaden their knowledge.”

“….something that explains to students about a concept, but then lets them go away and explore the concept further.”

“….give them some food for thought on it, to allow them to go and then develop a full understanding of that subject material, by reading around it themselves....”

**Year 1** students, whilst not specifically referring to an introduction or overview, were aware that they would be expected to expand upon the information conveyed during lectures, by reading in their own time, or by other teaching methods:

“....the lecturer provides you with the basic details....and then makes sure that you’re 100% sure of what it is, by other work....on it.”

“I agree with that, because when I go to a lecture, I think, “This is the basics....and then they kind of build up on that, so they expect you to kind of read up before and then go and build up on it again....”

“More a picture of everything you need to know, but there’s gaps in between that you need to kind of go and read up on.”

**Year 2** students did not refer to additional reading before or after a lecture, but expected lecturers to provide information they could not obtain themselves from other sources such as books, so that they could enhance their notes:

“....like you have to make notes and add to the notes that you might already have....”

“Yeah, I want to have learnt something more than either on the slides or something that I could read in a book....”

“Expect the information to be directed right towards the course, rather than....if you just read a book, there would be bits you just didn’t need....

One of the purposes of a lecture discussed in the work of various authors in Chapter 1, was the pulling together of information from several sources and lecturers tailoring it to the specific needs of students, or presenting new material not yet published in text books.

**Year 3** students also expected to receive additional information and were considering how the lecture content would relate to their future careers:

“....additional information – things to help you through the unit.”

“I think lectures, as well....for pharmacists, it helps us gain a better knowledge of what we’re going to be doing in our day to day jobs in the future.”

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3.2.4 Enthusing students

Creating interest on the part of students was one of 3 purposes of a lecture described by Brown (1978) and other authors cited in Chapter 1 wrote of inspiring students or stimulating their curiosity. Lecturers also spoke during their interviews of using lectures to enthuse, inspire or excite students:

“….also, hopefully, to enthuse the minds of the audience to go and find out more about it…”

“….I think you can try and inspire students, which is what you can’t get from a book….”

“You’ve got to give them that spark of enthusiasm for the topic, I think, to get them to understand it.”

Bligh (1971) reported evidence of students’ learning outcomes being improved when lecturers enthused about their work, but no focus group students referred to lecturers trying to enthuse or inspire them during lectures.

3.2.5 Putting information into context

Another aspect of lecturing spoken of by lecturers was putting information into context and making students aware of how their work connected with other aspects of the course.

“….I think that it’s important to try and put those facts into some sort of context, as well as one can in a fairly one-way process……”

“….you might be trying to piece it together with other strands of the course…”

“I will then ask a question – “do you know about this?”, “how does this relate to that, anybody know?”….just make them realise the interconnections between the 2 topics….”

Students made no reference to lectures enabling them to link together different aspects of their work.

3.3 What students do during lectures

3.3.1 Understanding

One of the purposes of a lecture suggested by Brown (1978) was generating understanding and when asked what they expected students to be doing during a lecture, lecturers’ first responses were usually that students would be listening to, thinking about, processing and trying to understand the information delivered during the lecture:

“….pay sufficient attention that they go away from the lecture with a broad understanding of what I’m talking about....”
“I would expect them to be listening to what I’m saying and thinking about how that relates to what I’ve got written and to what they’ve got written in front of them.”

“….trying to understand as best they can…”

“…. I would like them to also process the information while they are there…..so I try to at least give them some time to actually think about what I’m talking about…..”

One lecturer expressed the view that sometimes students did not have a good enough grasp of English, or understanding of the vocabulary he used, to fully understand his lectures:

“I worry about their command of English….increasingly, I’ve been asked questions in terms of, “What does that word mean?”….so I explain.”

The issue of students from overseas whose first language may not be English having difficulty in understanding lecture material was highlighted by McMullin and Munro (2003). All 4 years of students participating in the focus groups expressed a wish to achieve or improve understanding as a result of attending a lecture, but expressed disappointment or frustration that this was not always achieved. Reasons given by students for them not understanding work centred on the lecturers’ style of delivery and their belief that some lecturers were uninterested in whether or not students understood their work.

Year 1: “Some of the lecturers are better than others, so….you find you understand a lot more information from how it’s delivered than some others....”

“I also think it’s the way they deliver the information – some lecturers, they want to, you know, just get the information to you....”

Year 2: “A lot of the time....you don’t really come out of it thinking that you’ve learnt or like understood something....”

Race and Pickford (2007) and Dent (2005) advise that lecturers provide students with learning objectives so they are clear about what they should have achieved but for Year 2 students, this served to highlight the gaps in their learning or understanding.

“….they put learning objectives up and a lot of times, I come away and I don’t think I would be able to like, cover or have learnt those objectives....”

Year 3 students discussed a lecturer who did not post any notes on Victory, so they felt obliged to attend his lectures to get notes, which were dictated, but they did not understand the lecture material:

Student 1: “....by not putting anything on Victory....you have no choice but to go to [his] lectures.”

Student 2: “But you don’t learn anything.”

Student 3: “Well, personally, I don’t learn anything from [his] lectures....
Student 4: “No, I don’t either. I’m not going to lie, but I go purely because of [his] notes.

Student 3: “It’s just so frustrating!”

Student 5: “You just learn random words, but you don’t know what the words mean.” [group laughter].

Year 4 students also thought that whether or not they understood material depended on the lecturer’s style of delivery and ability to capture the audience’s attention:

“So I think….it’s all down to how….the lecturer’s delivering….their work, which some people cannot grasp or get an understanding for.”

“Yeah, and delivery is the more important thing.”

“….when [name] comes in, he captures everyone’s attention….he manages to catch the whole audience, but not all lecturers are able to do that and if they can do that in a lecture, then I think it’s more effective…."

The latter comment concurs with Gross Davis’s (1993) suggestion that lecturers should aim to grab students’ attention at the start of a lecture.

One Year 4 student did concede that some lecturers tried to check students’ understanding:

“They do ask questions, like, “Do you understand?””

Another student however, felt that if they did not understand the material delivered during a lecture, the onus was on the students to do additional work themselves:

“It's kind of your job – if you don’t understand it from the lecture, you have to fill in the background.”

The differences in the attitudes of lecturers to the extent of understanding they achieved as a result of attending lectures were summarised by another Year 4 student:

“I think some lecturers are….concerned whether you do actually get the concepts and will spend more time ensuring that you do, and others will just want to get the information out there - it’s like they’re not bothered whether you understand or not…..” [sounds of general agreement].

3.3.1.1 Pace of delivery

As discussed in Chapter 1, Exley and Dennick (2004) and Newble and Cannon (1994) recommend that lecturers are not over-ambitious about the amount of content covered in a lecture. Several authors cited in Chapter 1 also make the point that lecture material should be presented at an appropriate pace and McMullin and Munro (2003) suggest that lecturers pause periodically to allow students to make notes. The pace of delivery in lectures and the amount of material covered was highlighted as sometimes being problematic for them, by
students in all 4 years. They felt they had no time to consider what was being said and had to focus on writing, without knowing if they understood the information.

**Year 1:** “Depends on the pace of the lecture, if you can keep up....”

“You find you’ve missed one point, or you think, “Right, I’ll write that down” and you haven’t got a chance in hell, because the next part you completely miss if you’re not actually listening....”

“I think there has to be a happy medium....’cos sometimes I think, “What was I writing?” and they’re talking about something else and you think, “Oh, I’ll have to leave a line and then start somewhere else.”

**Year 2:** “Sometimes, there’s like too much in one lecture, like they’re whizzing through it and you haven’t really learnt anything.

“....some lecturers, they just put up like OHP slide after OHP slide and you have to copy everything down and they’re explaining it as they go, but....there’s all this stuff to write and they’re going to take it away and put the next slide on, so you’re not actually listening to them....”

**Year 3:** “Some lecturers have dictation and it doesn’t really help ‘cos we don’t know what we’re writing, we’re just writing ‘cos we’re in such a rush.”

“Mmm, and you’re not reading it and you don’t know what’s going on, just writing it, ‘cos you need to get on top of it.”

**Year 4:** “....one hour’s not always enough and sometimes lecturers just try to squeeze everything into the one hour....so I don’t think they get enough time to explain what it is they’re trying to say.”

Just one lecturer referred to being conscious of the amount of material he would deliver during a lecture:

“....generally try to keep it a reasonable amount of material for the time....”

Although some lecturers, as discussed below, believed their lecturing style may affect whether or not students attended their lectures, none raised the issue as a possible cause of students not understanding their work.

### 3.3.1.2 Interaction during lectures

One of the reasons raised by students for them failing to understand the material delivered in lectures was their perception of lecturers’ lack of engagement or interaction with them, some lecturers simply reading to them from slides:

**Year 1:** “....some lecturers are like trying to interact with students, whereas others are so disciplined...”
“I find that quite a few lecturers, they just read off the slides, but….we’d prefer it if it was more….expanded upon.”

“….they should try and balance it and not just read off the PowerPoint.”

**Year 2:** “Yeah, I think there should be more interaction…."

“Sometimes lecturers just give the lectures to get it over with, they don’t really check people are engaged with the information” [murmurs of general agreement].

“Yeah, it does make a difference, yeah.” [more sounds of agreement].

“….the lecturers who are going to become PhDs, like the younger ones, they tend to just regurgitate….the information.”

This last comment is supported by Exley and Dennick’s (2004) point that new teachers may be required to deliver teaching sessions long before completion of a teaching qualification.

**Year 3:** “Like [name] – he explains everything and he doesn’t mind going over and over it….”

“And the other lecturers just won’t help you; give you a look….”

The idea of improving student stimulation, engagement and recall of information recommended by Race (1998), Prince (2004) and Cottrell (2007) was discussed in Chapter 1 and lecturers were asked if they believed lectures should be largely didactic, as in the traditional style of lecturing, or if they felt there could or should be some interaction with students in lecture theatres. As suggested by the students’ experience of varying lecturing styles, lecturers’ opinions about the practicality of moving away from wholly didactic lectures to a more interactive style of teaching varied widely. Some lecturers, in common with the opinions of Exley and Dennick (2004) discussed in Chapter 1, thought there was little, if any, possibility of interactivity with students in a lecture setting:

“I would love the lecture to be something that was used as very much a 2-way process, but I believe that, with the size of groups I teach that are always over 100, that it’s very difficult to have a genuine 2-way process...”

“You can’t do much in the way of interaction with 150 students.”

“No, I don’t think there’s the time for that in the large lecture groups that we’ve got.”

“I tend to be fairly strict in what I allow the audience to do in terms of participation.”

Some students also did not expect any interaction with lecturers:

**Year 1:** “I don’t think it’s really about interacting with the lecturer, it’s just sort of this is the information and take it down....”

**Year 2:** “I think it’s like being taught, but….there’s not interaction, like between the teacher and….student....”
Year 4:  "One person talks; everyone listening."

"...you just have to listen, there’s nothing more to a lecture, I don’t think."

By contrast, other lecturers were much more positive and enthusiastic about interacting with students during lectures and some were already including varying amounts of interactivity in their lectures and even conducting lectures more like workshops:

"Oh, I think you can work interactively with a large number as well as a small number and my personal preference is to work with something interactive."

"You’ve got to offer them something more than just going through stuff, it’s got to be interactive."

"I don’t think it’s necessarily going to be a fully interactive ‘workshop-lecture’ for every situation but the vast majority I would want to do some...."

"I tend to run those lectures....as semi-workshops. I talk to them for about 10 minutes and then they practise things and they can put their hand up and get me to come and help them...."

"...one on one interaction - you can still have it in lectures and the ones that get it, you don’t need to help them, but the ones that can’t, you do need to be there to show them...."

3.3.2 Questions during lectures

3.3.2.1 Students answering questions

One of the ways in which students said they wished lecturers to interact with them was to check their understanding by going through questions with them.

Year 1:  "I think they should try and get you involved as much as possible by giving you questions and other activities to ensure that you do actually understand when you’re in the lecture...."

[referring to a particular lecturer]: ‘....he like stops; “Is everybody OK with this?”’, does little questions on the board, goes through them with you....you come out actually knowing something...."

These views support the findings of Challis et al (2009) who found that students liked illustrative examples during lectures.

Year 2:  "Yeah, I think there should be more interaction. They [lecturers] should ask the students questions, things like that."

Year 3:  "....if the lecturer asks you a question, you should really be able to interact with the lecturer without being shy or scared and I think lectures should expect that from us...."
“And then you get [name]... I think his lectures are amazing, absolutely amazing. He’ll give you a question and he’ll actually within the lecture, tell you to get into groups, or he’ll actually talk about it.”

3.3.2.2 Students asking questions

Lecturers expressed a wish that students would indicate to them when they did not understand the work, by asking them questions during lectures and positively welcomed students doing so, as they felt it also benefited other students attending the lecture.

“....I would like them to be putting their hands up and asking questions, if they don’t understand....”

“....what some of them do is ask questions actually in the lecture and I’ve got no problem with them asking questions as we go through....”

“....you can’t predict what questions the audience is going to ask....sometimes the questions will sponsor a really important piece of information....”

“....I do prefer if students ask at that point in front of all their peers, because you can be sure that there’s plenty of other people have got the same question.”

A Year 4 student raised the point however, that if a student asked a question, most of the other students could not hear it, so did not benefit from hearing the answer.

None of the lecturers interviewed said they would discourage students from asking questions during lectures. However, lecturers did perceive reluctance on the part of many students to ask questions in front of their peers, a point concurred with by Newble and Cannon (1994) and Race and Pickford (2007). Lecturers found that students preferred to speak to them at the end of lectures.

“....they don’t want to show themselves up in front of their peers as not understanding the material.”

“I understand.....those who ask questions are actually looked down on by other students, because it’s seen as being ‘a bit educational’.”

“....some don’t like asking questions in front of everybody else, but they will actually come up afterwards....”

One lecturer explained that he was happy for students reluctant to ask questions during the lecture, to approach him at the end:

“The reason I don’t have a problem with people asking questions afterwards is that while they’re asking me questions, I’m closing the computer down, gathering my papers up in the box, so it’s time I would be spending doing my general tidying anyway....”

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Another lecture had considered how he might overcome the issue of students having unanswered questions at the end of a lecture:

“I’ve sometimes toyed with the idea of saying at the end of a lecture, “If anybody has any questions from this lecture, email them to me.” If there’s a common theme, I will then put the answers on Victory as FAQs. I won’t necessarily tell them the answer, but I will say, “You will find the information relevant to this question in…..””

A similar idea was suggested by Race (1998) who suggested that students could put their questions on ‘post-its’ for the lecturer to address at the start of the next lecture.

The reasons given by Year 1 students for not asking questions in lecture theatres concurred with the suggestions put forward by lecturers and authors, for example, Newble and Cannon (1994) and Race and Pickford (2007), that they did not want to show themselves up in front of peers and they were reluctant to ask questions in front of a large group:

“….you’re like, “Oh, no, I’m not going to disrupt everyone now, I might, like, sound stupid” (laughs).

“I think it’s intimidating to ask a question, ‘cos of the amount of people in the room and if you’re used to smaller groups, like a classroom; my class really had about 20 and then, from 20 to like 130 (laughs) is a massive difference.”

They felt that even if lecturers invited questions from students, they would still be reluctant to ask them:

“….a lecturer might say, “Is everyone OK with that?” and some students might have a question, but they still won’t ask, they’ll be just like, it might be a stupid question or whatever…..”

A Year 2 student suggested that lecturers might make themselves available to answer questions at a time other than during the lecture, as he believed students disliked asking questions in front of a large group of students, especially when pharmacy students were being taught together with those on other degree courses:

“…..it would be nice if there was some kind of drop in thing where you could go and see the lecturer and ask him or her about any queries that you have.”

Year 4 students also acknowledged reluctance on the part of students to ask questions during lectures:

“People don’t like to ask in front of the big group.” [general agreement].

“Not in the lecture.” [murmurs of general agreement].

Students also believed that many lecturers did not welcome them asking questions during lectures.
Year 1: “….if they just kind of stop and look around at you and then carry on, you think, “If I go and stick my hand up, are they going to ignore me, or are they actually going to pay attention….?”

Year 2: “Some lecturers like interaction, they like it when people ask questions, or they field questions and they like us to answer things, but some of them are not keen.”

“But they, often, they don’t want to take questions.” [Murmurs of general agreement and “That’s true.”]

A Year 3 student cited a particular lecturer who was willing to offer explanation when students did not understand his work:

“[name] explains everything and he doesn’t mind going over it and over it….like, if you don’t know it, he won’t treat you like you should know that....”

This approach was contrasted with that of other lecturers who were seen as unwilling to provide additional explanation of their lecture material:

“And then other lecturers just won’t help you.”

“Give you a look.”

“And look at you as if you’re really dumb.”

“Have you not looked on Victory?” [laughter.]

Year 4 students agreed that generally, lecturers did not wish them to ask questions during lectures:

“But I don’t think they [lecturers] like you to ask questions during lectures.”

“….my understanding of a lecture is that you go, you get told what’s taught….that’s what a lecture does, isn’t it?”

3.3.3 Note taking and handouts

3.3.3.1 The need to make notes

Reasons for taking notes during lectures and the benefits to students, such as being able to review and revise from them, and the very action of making notes increasing student performance, were described in Chapter 1. Lecturers who were interviewed commonly believed that students should make notes during lectures and were surprised that they might consider it unnecessary to do so:

“….I’ve always told the students that the handouts are there to aid the lecture, they’re not there as a substitute....they are actually a bare skeleton of what I actually say and there is space (thank God for PowerPoint!) for filling in all the ‘bons mots’ that I let slip during the lecture.”
“....I can’t see how even the brightest students could get through one of my lectures without taking a few notes to supplement what’s on the handouts.”

“....I would expect them to make their own notes on those bullet points so that they can put down on paper what they’ve actually understood from what I’ve told them....”

“They must have the best photographic memories ever! I look at them and I think, “You haven’t written a single word in the last 25 minutes. I mean, some of them don’t even have a pen!”

As discussed in Chapter 1, the perception of many authors is that university students like and expect handouts. MPharm lecturers at Portsmouth generally agreed with this:

“....students aren’t happy unless they come out with a handout for that particular information.”

One lecturer described how his approach to handouts had changed. When he started at the university, he did not provide handouts and expected students to make their own notes, but quickly realised the students found that too difficult. He then discovered that other staff provided handouts, so began providing printed handouts. He now intends to provide partial handouts on Victory, with gaps to be filled in.

One of the most common formats for lecture handouts was to provide a copy of the PowerPoint slides used for a lecture, for the students to add additional information:

“A series of PowerPoint slides in the form of 6 per page with space below or by the side to write information on. If I think there’s a lot of information to write, then I’ll cut it down to 3 per page. Attached to that might be an appendix....and I do photocopy the odd.....article and stick in the back as well.”

“All I give them are the basic slides....I print them up so there are 3 on a page and the spaces at the side and I make it very clear to them that what’s written on the slide will not be enough information – they need to jot a few things down.”

“I put it up in the format where the notes section is on the side, those little lines....”

Not all lecturers however, favoured the use of such handouts:

“I don’t think they work at all, no....I think they can’t cope with looking at bullet points and making their own notes....”

There were also reservations expressed about the possibility of students perceiving that they had enough notes on the handout by the end of the lecture and not reviewing their notes afterwards:

“....the temptation is, because of the nice printed bits, you don’t actually go away and re-write it, so you don’t ever really add to it and that’s possibly a disadvantage.”
Although none of the lecturers interviewed said they provided full notes so that students would not need to take additional notes during lectures, this was perceived to be the case by students. Lecturers not providing further information in addition to that provided on handouts was cited by students as a reason for not attending lectures and for disruptive behaviour in lectures, as discussed below, and it was also raised when they talked about taking notes and their preferred form of handouts.

**Year 1:** “I think it’s different for different lecturers, because some expect you to fill in parts of the slides you’ve printed off, or they’ve given you…. rather than someone sitting there and reading out a slide show to you. So, it depends on the lecturer.”

Another student talked of the difference he perceived between traditional and current lectures and expressed a preference for a need to make some notes:

“I think the old scheme of like where you….knew you had to get everything down on that piece of paper within that hour….they’ve kind of taken it from one extreme to the next, where you could just sit back and just basically gaze around the room and not do anything, so a happy medium would be good.”

**Year 2** students also spoke of inconsistencies in note-taking requirements for different lectures, but were more accepting of different styles:

“….some lecturers, like note-taking’s important….but others, they have everything on the slides….so I think it’s just varying styles – you just have to adapt to them.”

Lecturers acknowledged, in agreement with the work of several authors mentioned in Chapter 1, that some students had difficulty, when making notes, in determining what and how much needed to be written down:

“They’re not able to take lecture notes these days....”

“....I think they just generally lack the skills and they’ve never had the experience of having to write and take their own notes....”

**Year 1** students, when asked what was expected of them in a lecture, immediately responded that they should be taking notes and one student had clearly come to the conclusion, from experience, that it was necessary to do this, so that handouts made sense later on:

“You find that you’ve gorra pay attention and write stuff down, whereas you can just sit back and listen and it doesn’t really….make sense then, when you go back to it.

This student’s observation is supported, as discussed in Chapter 1, by the research of Newble and Cannon (1994), McMullin and Munro (2003) and Race and Pickford (2007).

**Year 1** students found it helpful to have gaps on handouts to indicate where they needed to record additional information that would be provided by the lecturer:
“I think if there is gaps, it makes people work, because they would rather go into the lesson and get the gaps filled out…rather than having to go away and read a book and find out….”

“….the gaps really work. I don’t know if it’s so for everyone else, but for me….”

**Year 2** students discussed having no handouts provided versus partial notes with clear indications as to where they needed to make additional notes. Like Year 1 students, they disliked dictation and expressed a preference for handouts with partial notes and gaps for additional information:

“And some don’t put their notes up on Victory….

“Yeah, I don’t find I learn anything from those lectures, like it’s just literally dictation, or you’re just copying down from the OHP slides.”

“I think filling the blanks is better than that.”

“Yeah, filling the blanks is better.”

As stated in Chapter 1, leaving gaps on handouts to make students aware of when they need to make notes was recommended by Exley and Dennick (2004), and McMullin and Munro (2003) suggest that verbal ‘signposts’ are also helpful for students in knowing when they should write something down.

**Year 3** students also referred to “filling in the blanks”, but objected to being required to fill in single words on handouts:

“….filling in the blanks – it’s like something we did in primary school!”

“Don’t you think that filling in the blanks is actually useless? ….‘however’ was one of the words we had to fill in yesterday.”

“Yeah, and ‘options’ was a word. Yeah, it’s just ridiculous!”

“….fair enough if it’s like names, streptococcal or something like that….because you gain something by not missing that lecture, but ‘options’ – ridiculous!”

**Year 4** students also expressed a preference for adding their own notes to a partial handout:

1st student: "If you give like a bullet point….and then talk around it...."

2nd student, interrupting: “That’s the perfect…. like, not having too much detail on the PowerPoint slide, but giving more detail, so that we can listen and write down what he’s saying.”
3.3.3.2 How handouts are provided

Lecturers also talked about how they made handouts accessible to students, some providing printed versions and some loading material onto Victory, for students to print off themselves. There was a variety of opinion about whether lecture handouts should be provided individually or as a booklet covering a number of lectures:

“I used to do it semester by semester, but I’m finding, with the pace of change….it’s becoming quite high risk. Something you’ve sent to the printers in July or September to deliver in November has suddenly gone out of date. So I’m more likely to move to several packs a year, on topics. I don’t think I’ll ever go back to lecture by lecture.....”

“In years gone past, we’ve had the handout booklets at the beginning of the year and when students have that book, they almost feel they have….all the information and there’s no real need for them to go to a lecture....”

“Where they’re a part of a large section of lectures....I tend to produce a lecture booklet with all my lectures in with associated DPS....I also give individual lecture handouts for some other things as well.”

Year 1 students were in favour of lecturers providing the handouts for a series of lectures in booklet form, because sometimes a lecture related to notes on more than one handout and they may not have printed off enough handouts:

“....depending how quickly the lecturer goes through the lecture, it’s not necessarily one PowerPoint per lecture....and he or she moves on to another one and you think, “Oh, damn it, I haven’t got those notes with me”....so it’s quite annoying then ‘cos you’ve got to try and catch up at home.”

“Yeah, I agree – the booklet.”

“Wouldn’t it be best to have like an overall booklet....like all the lectures in one booklet with all the directed private study, so it’s all in one place?”

A discussion followed about whether people would turn up to lectures if they already had a booklet of handouts and DPS. The students agreed however, that as long as additional information was provided by the lecturer, they would be motivated to attend the lectures.

“....have a happy medium, so like having them [handouts] in advance, but actually not having too much information, so you still have to turn up to fill them in.”

This opinion supports the view of McMullin and Munro (2003) who assert that the provision of partial rather than full notes encourages lecture attendance by students.

Year 4 students also referred to favouring lecture handouts in booklet form, which had been provided earlier in their course:

“It’s quite good having it in a book....’cos then you know you’ve got it there, you’re organised....and when it comes to exam time, all your notes are in one place....the core material that you need, rather than having bits of paper here and there.”
3.3.4 Inappropriate or disruptive behaviour in lectures

Problematic student behaviour such as students arriving late, students talking and mobile phones being used during lectures were all discussed in Chapter 1. Both lecturers and students were asked to talk about what they considered to be inappropriate or disruptive behaviour in lectures.

3.3.4.1 Late attendance

When asked if they had experienced any inappropriate behaviour on the part of students, lecturers cited, in common with authors discussed in Chapter 1, late attendance:

“Well, it is the coming in late and then disrupting the lecture....”

“...coming in late for no good reason, once you’re started, is very difficult to deal with, very rude, very disruptive.”

“I sometimes give them a break in between [a double lecture] and I still see some of them either not returning or coming back late again!”

One of the respondents to the Scoping Exercise reported problems with late attendance, but only “in early years of the course”.

Year 1 students admitted that they sometimes attended late themselves. If individuals arrived late, they believed it did not usually interrupt their concentration on the lecture:

“Not many people come in late....”

“No, no, there are some that do though.”

“But it doesn’t interrupt you; if they just carry on, then that’s fine.”

“I mean, you’re so busy writing anyway.”

“So busy concentrating.”

An instance was cited however, of a large group of students arriving late, which was considered disruptive and also rude, as they did not apologise:

“....a whole group of people, they walked in late and it was like really disruptive....didn't even say, “Sorry” and I thought it was really rude.”

Another student however, found the late arrivers entertaining:

“It’s more amusing to see who comes in.”

A further opinion was that the level of disruption caused by students arriving late depended on the lecture theatre as some have the entrance at the back and some at the front:
“I think it depends on the lecture hall. In [lecture hall]...you have to like come in through the front, so the lecturer has to stop for people to sit down, whereas if you’re in another lecture theatre, they come in from the back, so it doesn’t really bother me.”

Year 2 students made no comments about late attendance and Year 3 students did not regard students arriving late as a major problem.

Year 4 students were aware of a group of persistent offenders:

“....the same people walking in late all the time and you get annoyed when they walk in late and interrupt things, ’cos you recognise them, all the time, walking in late.”

3.3.4.2 Talking

Another problem with student behaviour in lectures, mentioned by Exley and Dennick (2004), is talking, also raised as inappropriate behaviour by lecturers:

“....you might get a little bit of chatting going on from time to time.”

“....or it might be whisperings going on all the time....”

“....people do talk sometimes, people do make a bit of noise....”

Lecturers commented that disruptive behaviour, such as talking during lectures, adversely affected the learning opportunity for both those talking and for other students:

“....it is a little bit annoying when you think that these kids are here, they’ve paid a lot of money....and they think it’s OK to disrupt not only their own learning but those around them....”

“....it disturbs......a number of students around that particular individual....”

Two of the respondents in the Scoping Exercise also mentioned students’ talking as a problem during lectures, although at one SoP, as with late attendance, talking amongst their pharmacy students appeared to be confined to “the early years of the course”.

Year 1 students found that when people talked during lectures, it made it hard for them to hear the lecturer:

“Well, if there’s 2 people right behind you and they’re basically whispering fairly loud....if people behind you are talking, it’s very hard to hear what the lecturer’s saying.”

Some of them however, felt that students’ conversation might be more interesting than the lecture:

“If they’re talking about something good, do you feel like you want to join them?”

“Yeah, I’d rather do that.” (laughter).
Boredom or lack of interest in the lecture topic was discussed as a reason for disruptive behaviour during lectures in Chapter 1.

**Year 2** students raised the issue of talking and whispering by a particular group of students in their year:

“....there’s often a crowd that’s always noisy.”

They also admitted that they did themselves occasionally talk in lectures.

**Year 3** students felt that talking in lectures had diminished over the years and that some of the offending students had left the course:

“Last year there was; first year was crazy, but I think like all the people that annoyed us....got kicked out.” [laughter in the group].

“No, no, the main talkers...who were really annoying in lectures, they all got kicked out....”

“It wasn’t even like a mumbling in the first year, it was proper full-on like talking.”

“....you get people like that but, like I say, they all got kicked out.”

“Yeah, they all got kicked out.”

The general opinion was that the remaining students were now mature enough not to disrupt lectures by talking:

“I think we’re all grown up now.”

They also felt they were often too busy to talk during lectures:

“Like you don’t have time to talk this year. You don’t have time to breathe in the lectures any more.”

Some **Year 4** students felt they were now ‘immune’ to distracting behaviour in lectures.

They also admitted that they had themselves talked in lectures in the past:

“Yes, everyone has [talked], haven’t they?” [affirmative responses and laughter].

“But you only notice it when other people are doing it, not when you’re doing it.” [general agreement in the group].

One student expressed a lack of respect for students who were interested in a lecture in which he had lost interest:

“.....there might be people that are still interested, so you don’t.....sort of respect them, because you can’t see how people can be interested still.”
3.3.4.3 Mobile phones

Another source of disruption in lectures mentioned by authors cited in Chapter 1 and also raised by lecturers during their interviews, was mobile phones:

“….because we live in a technology age and they’re contactable at all times, it’s text messages…..”

“….they put them on silent, but then they still feel them vibrating and then you would see the phones come on.”

“….mobile phones, still mobile phones, despite all the warnings that students get.”

The same problem was mentioned by one of the Scoping Exercise respondents:

“Texting and replying to e-mails in lectures.”

Other lecturers interviewed felt the problem of mobile phones had reduced over time:

“Mobile phones, though not so much recently.”

“But we don’t have as many phones going off. (It might just be that they have them on silent, so they don’t get caught.)”

Students appeared to find mobile phones less disruptive than talking during lectures and the only students who mentioned mobile phones as a source of disruption were in Year 2:

“Talking and whispering during lectures; phones going off.”

3.3.5 Reasons for disruptive behaviour in lectures

3.3.5.1 Late attendance

One Year 1 student felt that lateness was often justified because the university buses were sometimes full, which meant he would be late for the first lecture of the day, even though he had made the effort to get up in plenty of time. He felt lecturers should show leniency at the beginning of the day, but not later in the day, as buses were generally less full then.

Another student admitted to recently being late for a lecture because of having gone to get something to eat beforehand.

A Year 4 student, in common with the Year 1 student, believed that sometimes travel difficulties made students late:

“….there’s….other people that have a long way to travel to come and they, you know, walk in late. I think that’s difficult and you’ve got to allow people into their lectures.”

Transport problems were also stated by students as a reason for being late when Kottasz (2005) surveyed students.
3.3.5.2 Talking and other ‘disengaged’ behaviour

‘Disengaged behaviour’ refers to activities such as chatting, using phones, reading unrelated material or simply ‘switching off’, discussed in the thesis, that suggest students are not focused on the content of the lecture.

3.3.5.3 Boredom

As Exley and Dennick (2004) highlight, students have long perceived lectures to be boring. All 4 years of students felt that they were likely to become distracted and engage in disruptive behaviour such as talking when they were not stimulated and found the lecture boring. Several reasons for this were raised, which were largely similar reasons to those cited for them not understanding the content of lectures (discussed above) or deciding not to attend lectures at all (discussed below). These reasons included all the notes needed already being on the handout, being required to copy from slides, lecturers not engaging with students by means such as eye contact, checking understanding and asking questions, or even the lecturer digressing from the topic:

**Year 1** students:

“I think the more a lecturer engages with the students, the more alert everyone is ‘cos some students’ll be terrified they’re going to be asked a question, so they’ll be more likely to stay awake.”

“[Lecturer], his technique is very good, ‘cos he keeps you engaged, he asks a lot of questions....you feel like you’re getting more out of it....”

“I tend to talk as well. I can’t help it. If I switch off, then like somebody at the back says a passing comment, it’s just natural to talk back....and then usually, more people join in....”

“It’s better when lecturers talk to you....I find that a lot of the lecturers will just stare at the floor or the board, or at the PowerPoint, or at the computer...there’s no eye contact....if someone’s talking like to you, you’re more likely to want to respond like, and listen.”

The last point, relating to the need for lecturers to face students and maintain eye contact with them, is mentioned by several authors and highlighted in Chapter 1.

As Exley and Dennick ((2004) and other authors, cited in Chapter 1 say, lecturers need to be aware of the needs of the students on the receiving end of their lectures. According to the comments of some **Year 1** students, this was not always the case. They spoke of a lecturer who talked without pausing, although, apparently, many of the students were not understanding the topic:
“….it’s not even as if he just says, “Does anybody follow what I’m doing?”, ‘cos none of us do.”

“You can look around and see what people are doing, like noughts and crosses and hangman, ‘cos we’re all so bored.”

This was compared with a lecturer teaching the same subject, who took time to check students’ understanding:

“He like stops, “Is everybody OK with this?”, does little questions on the board, goes through them with you…. You come out actually knowing something, whereas with [name’s] you don’t have a clue....”

“He talks to you and he makes a lot of eye contact....”

It was generally agreed within the group that students responded to the lecturer under discussion because they were not made to feel uncomfortable if they asked questions and they liked the technique of going through questions during the lecture because that highlighted whether or not they understood the work:

“So it’s nice to get little exercises, just to think, “Well, I’m not understanding it, maybe I should pay more attention.”

Year 2 students felt they might start talking if the lecturer digressed from the lecture topic, so they lost concentration:

“….when the lecturer, they just totally go off the topic and….some kind of joke comes along and….it’s really hard to get back into it.... It’s good to make jokes and interact, but not so much to the extent that you’re just kind of....

“Digressing off the subject, yeah.”

Again, a preference was expressed for having a need to be taking notes in lectures:

“It depends...you know, if everyone’s trying to get down notes, then everyone’s going to be concentrating too much to be chatting and stuff.” [murmurs of agreement].

The same students also felt the tendency to talk could be influenced by the time of day:

“….if it’s like 9 o’clock in the morning, then people are probably going to be so tired that they won’t do it. If it’s like right after lunchtime....there will obviously be more chat....”

Year 3: “It depends mostly on the lecturer, to be honest.”

“If it’s like a lecture where it’s just copying....

“….there’s no way you can sit through one of those lectures without talking to someone.”

“Having a conversation.”
Reasons suggested by lecturers why students behaved inappropriately or disruptively in lectures were about the personal characteristics of the students, rather than the lecture content or delivery:

“….it must be quite daunting for a kid of 18 to sit in a lecture theatre of 150 people and resist the temptation to clown around....”

“...I think it’s just a discipline thing. I think that they’re never taught that this is not appropriate behaviour.”

“There will always be a group who think it’s clever, or they just don’t care, maybe, I don’t know.”

No lecturers suggested that their own style of delivery might affect the engagement of students or lead to inappropriate behaviour in the lecture theatre.

3.3.6 How disruptive behaviour in lectures is dealt with

As discussed in Chapter 1, whilst Exley and Dennick (2004) and Newble and Cannon (1994) state that disruptive behaviour should be dealt with by lecturers, little advice is offered about how to go about this. Both lecturers and students addressed the issue during the interviews and focus groups.

3.3.6.1 Late attendance

Year 1 students discussed at some length how lateness should be dealt with. It was clear that they perceived inconsistence in attitudes towards lateness from different lecturers and behaved accordingly:

“....some lecturers say, you know, “I don’t really mind”, whereas others say, “You have to be here 5 minutes beforehand” you know.

....everybody is quite worried not to get into [name’s] late and everyone rushes to get to his lectures, just so they’re on time, but with everyone else, I think people are quite laid back....”

“Some lecturers, they say like, “If you’re late, you’re not coming in....” So long as you know where you stand, like.”

Generally, Year 1 students expressed sympathy with, and a wish for leniency towards, students who turned up late for lectures:
“....I’d rather people just come in and attend the lecture, rather than people say, “Don’t bother coming in....like, if they’ve come to uni, they might as well fit in the lecture, even if they are late.”

One student suggested leaving empty seats for late attenders:

“....they should just leave like the back row empty for late comers or, if it was in [lecture theatre], leave the front row empty.”

A second student envisaged that such a rule would worsen late attendance:

“....I think a lot more people would be late if there was a rule that you could be late....”

In contrast to students, lecturers expressed little tolerance towards students who arrived late and some were even prepared to evict students who turned up late, from the lecture theatre:

“....I don’t tolerate them coming in late, I actually wait for them to leave.....”

“If I’m just starting and they’re a couple of minutes late, that’s fine, but say someone walks in 10 minutes after I’ve started, I do ask them to leave.....they don’t tend to disagree with me!”

One lecturer however, specifically stated he would not do that:

“I won’t actually throw anyone out of a lecture....you can’t risk the face off with them; it’s too risky.”

3.3.6.2 Talking and using phones
Reactions to lecturers being asked about how they dealt with disruptive behaviour in their lectures ranged from denial that the problem warranted any action to inviting offending students to leave.

Examples of comments from lecturers who perceived no need to take action:

“On the whole, I really don’t find it a problem.”

“....usually, you can overcome that [disruptive behaviour] by being interesting and involving them....”

“I think sometimes if you’re reasonable with people, they’ll be reasonable with you....”

Some lecturers did not address the problem directly, but made the students aware that they had noticed inappropriate behaviour:

“....trying to create some eye contact with those individuals.”
“….just approaching them fairly closely, by walking up the middle, quite often helps….”

A more direct approach was to ask students to stop talking, without significantly interrupting the lecture:

“The odd whisperings…. just a pointed look and say, “If you don’t stop this, I’m going to make it very obvious who you are”.”

“‘You’re going to be quiet now’ seems to work.”

“….OK, I can see you’re talking. Out of courtesy to those behind and those in front who may actually want to be here and listen, could you stop talking, please?”

Some lecturers were quite clear that they were prepared to stop their lecture and deal with a behavioural issue, before resuming:

“….say, “If you’re going to continue, I’m not going to continue….you either stop talking, which I think is very rude, or I’ll stop. I’ll give you the topic title and you can research it yourself.” That soon focuses a few minds.”

“….I’ll stop my lecture and I will make it very clear what I think of people who are disrupting it.”

“….I’ll stop the lecture and say, “right, you, you and you, shut up.”….at the end I say, “right, before you go – you, you and you, a word”….give them the riot act, tell them I know who they are, do it again, I’ll report it and it will be dealt with outside of the lecture….”

Other lecturers said they invited students who talked during their lectures to leave the lecture theatre:

“…..if it happens on a repeated basis, then inviting the students to leave the lecture theatre.”

“I really impress upon them the disruption they’re causing to their fellow students and that I don’t consider that to be acceptable and, if they wish to misbehave, I tell them they’re quite welcome to leave. I have no hesitation about that.”

One lecturer insisted that students talking at the back of a lecture theatre moved towards the front:

“….I actually say to them, “pack your bags, lots of seats in the front, come down.”….I just wait for them to do it and say, “I’m not going to continue until you actually come down.””

Whilst offering little specific advice about dealing with disruptive behaviour and agreeing that it should be dealt with for the sake of other students in the lecture theatre, Exley and Dennick (2004) do advise against direct confrontation with students or any display of aggression on the part of lecturers.
Year 1 students made no comments about how lecturers dealt with disruptive behaviour in lectures.

Year 2 students felt that lecturers should do what they said they would do, rather than issuing empty threats:

“....there was so much noise in the lecture theatre and it just kept going on and on and I think a group of people were given about 3 warnings and then the lecturer actually said, “If you talk once more, I will chuck you out” and it kept on happening and happening. Well, if you’re going to say anything, just take the action and get it over and done with.”

Year 3 students discussed a particular lecturer who, they believed, always appeared to be looking directly at them when they looked up during a lecture and they felt that kept them focused on the work:

“You feel like he’s got his eye on you particularly.”

“I’m like, “Oh, did they just see what I was just doing?....”

Rather like Year 2 students, Year 4 students felt that the reaction of lecturers to students talking was important and the prospect of being identified when talking in a lecture acted as a deterrent:

“....some lecturers don’t have much authority, so people do just talk in their lecture, ‘cos they know they’re not going to get really told off much for it, whereas other lecturers, obviously, you know, you wouldn’t dare talk in their lecture, because....you’d get sort of pointed out and that.” [laughter].

3.4 What lecturers do during lectures

3.4.1 What lecturers say

Lecturers described introducing topics, providing a plan of the work and telling students where to find additional information:

“....I straightaway go into what the learning objectives are for that particular session....”

“....start off with a plan of what I’m going to say.”

“Well, I usually start off in a lecture with telling them what we’re going to be talking about....”

Although students claimed to be bored in lectures where lecturers literally read to them from notes and referred on many occasions to this happening, all the lecturers interviewed claimed to ‘talk around’ the subject and provide additional information, with none admitting to reading from slides or books:
“I talk around the bullets and the subject.”

“I don’t work from a script in a lecture – I never have done….I talk around it with a few key notes….I can’t deliver a scripted lecture.”

“I don’t actually prepare a lecture or write up every word I’m going to say, I literally follow the structure of the bullet points I’ve given them and I just talk around the topic.”

3.4.2 Engaging students

The issue of students’ disruptive behaviour in lecture, such as talking, occurring when students felt disengaged with a lecture was discussed above. As highlighted by Prince (2004), student engagement has a positive effect on a range of learning outcomes. Students felt they were engaged in lectures when activity was required, rather than just listening to the lecturer, when lecturers appeared excited by their own work and when lecturers appeared engaged with the students, by making eye contact or looking at them. Other things mentioned as improving students’ engagement were a need to add information to handouts, rather than having full notes provided, and for lecturers going through questions with them to ensure their understanding.

Year 1: “…..when I have to fill in gaps, I’m more alert and I can actually follow the lecture, rather than if I’m reading, I’ll switch off, ‘cos then I can do it later…..”

“I think the more a lecturer engages with the students, the more alert everyone is.....”

“I find that a lot of the lecturers will just stare at the floor, or at the board, or at the PowerPoint, or at the computer....there’s no eye contact, nothing....”

“So it’s nice to get, like, little exercises....”

“....a case study, or whatever else....to try and get students thinking about it.”

Year 2: “Some lecturers,....they put blanks there....and I find that....it keeps you engaged, ‘cos you’ve got to know what’s going to happen next. If they’re just reading from the slides....you just stare.”

“Like eye contact is nice, and just checking.”

Year 3 students discussed some lectures where the lecturer had attempted to engage and interest them by allowing them to discuss questions in small groups within the lecture theatre and then getting feedback from them. They were divided about how effective this type of activity was however, as they believed many students just chatted amongst themselves within their groups, rather than addressing the questions posed by the lecturer.
Year 4: [In response to being asked what helped to keep them engaged]:

“...it’s quite nice when they walk up and down – it’s like they’re interacting with us...”

“And I think it helps like keep your attention as well, with them moving, rather than just like stood still.”

“Make it more interactive – do something and then they give us feedback afterwards.”

“...if the lecturer seems excited about his work and if the lecturer’s not doing that, you think, “Ah well, what is the point?””

“...activities, quizzes, during the lecture....it gives the lecturer the chance to interact more with the students....”

3.4.2.1 Relating teaching to students’ careers

Students also felt it helped engage them in lectures if lecturers related what they were teaching to being a pharmacist, or talked of their own experiences. They felt they were more likely to remember information when its relevance to their future careers was highlighted.

Year 1: “I like it when they relate it to pharmacy....I know I’m going to remember that.”

“[speaking of a chemistry lecturer] – “...he said, “...cos you’re pharmacists, this is why you need to know it” and that really helped.”

“So long as the lecturer makes it clear and illustrates the example in terms of pharmacy....”

Year 2: “...they’re quite expert in that field, so they should be able to tell you like how that will relate to you....”

“I think if they bring in their own experiences of in a pharmacy setting or, you know, their own experience, it definitely helps understand things better, and patient perspectives and so on.”

“It’s sometimes easy to forget where you’re going to be working. You get so bogged down with all the science and you forget, you know.”

Year 3: “I think lectures as well...for pharmacists, it helps us gain a better knowledge of what we’re going to be doing in our day to day jobs in the future.”

“When they did the cases of ‘this guy did this and he got fired’, and you’re, “Oh, God!”’’

“And you always remember that one!” [murmurs of general agreement.”]
Year 4: “To relate it to pharmacy as well...’cos I find that if I’m learning something and I don’t see the relevance to me and my role as a pharmacist, I’m less inclined to want to listen and pay attention but, if they make reference to scenarios where what we’re learning if going to be important for us....then you’re more attentive to what they’re saying and then you’ll remember it....”

“You’re not just learning a core subject and it makes it more personal to the students....”

“So, if someone tells us a story that’s pharmacy-related, you’ll remember it.”

Some lecturers raised the point of expecting students to relate the work covered during lectures to their future careers, and one spoke of giving specific examples to students:

“I would like to think they’re actually thinking about how what I’m saying relates to the job they might be doing.”

“So, I expect them to think and when they go away, I expect them to....perhaps.....to reflect on what they’ve learnt and how it applies to them in pharmacy.”

“I do find that....about 20 minutes in, they start dipping....and I tend to interject at that point with something that happened in the pharmacy.”

Lecturers also talked of trying to interest and engage students by judicious use of humour and illustrative stories:

“I usually try to throw in examples and a few jokes, just to keep people amused and interested....”

“I will usually go off track and give them a few anecdotes and a few stories about things that have happened in pharmacy, to illustrate how things can and cannot go wrong.”

Newble and Cannon (1994) suggest the use of jokes and stories to maintain interest in the lecture theatre and as a means of introducing variety when students’ attention dips.

3.5 Visual and other aids

As discussed in Chapter 1, there have been recurrent predictions that lectures could be not just enhanced, but replaced, by other means of conveying information and several authors mentioned a plethora of technological advances that can affect how lectures are delivered, such as VLEs, videos, television and computers. Lecturers and students mentioned several visual and other aids that were being or could be used during, in conjunction with or instead of, traditional lectures at the University of Portsmouth.
3.5.1 Audience response systems

Audience response systems (ARS) being used as a way of enhancing lectures were discussed in Chapter 1, together with evidence that students’ attitudes to such systems were positive. At the time the interviews and focus groups took place, although an ARS was available to pharmacy lecturers, it was infrequently used due to the time required to set it up and the limited number of handsets for students to use. Some lecturers did however, talk about the usefulness of such a system:

“I’d really like to use responders and I’d like to use it on a regular basis....that, I feel, would encourage them to turn up to lectures a little bit more regularly.”

[Same lecturer] - “....you can just simply spend 10, 15 minutes discussing something and then introduce, not just basic multiple choice questions, but questions that lead on, that introduce some critical level of thought as well.” “It’s absolutely fantastic and I’m a huge advocate of this.”

[Different lecturer] - “It makes it a little bit more interactive and I think that’s something where we haven’t moved on. We’re still delivering a lecture in a very similar way, albeit using PowerPoint, rather than chalk and talk, but....it’s still didactic, as it was 20, 30, 40 years ago, and the kind of students that we have coming through our doors don’t necessarily respond particularly well to that type of delivery.”

The purchasing of a modern ARS was under discussion at the time, within the Pharmacy Division, and this was spoken of by some of the students as something that would improve their engagement in lectures. Other students had experience of the existing ARS:

Year 1: “I’ve heard someone talking about like that game thing – you have like questions and everyone has to press like A, B or C.”

Year 3: “Like that ABCD thing; I liked that.”

“Oh, that was awesome!”

“That answering questions. You have like a machine thing and you have to answer it.”

“And it’s anonymous as well, so you never know who got the wrong answer.”

“Things like that, so you know if you’re on the right track or not and you know what you have to go home and revise more of.

Year 4: “They could be using, you know, that interactive....we used it at the end....”

“Yeah, but it takes time to set up.” (general agreement).

“....if they used it more often, that would benefit students as well as the lecturers; they would know how we are understanding a topic....”

“And we would know if we’re on the right track.”
“Definitely a good technique of teaching.”

Two of the SoPs who responded to the Scoping Exercise were using an ARS, known as Turning Point, to monitor attendance at lectures by their students. In both cases, monitoring had only begun in September 2010, so no data was as yet available to show if monitoring attendance had an effect on levels of student attendance, or on exam performance.

3.5.2 PowerPoint

The use of PowerPoint in academia, together with its advantages and disadvantages was described in Chapter 1. All of the lecturers interviewed, with the exception of one lecturer who disliked the package and never used it, used PowerPoint presentations for their lectures:

“Mostly I use PowerPoint....so they’ll get the screen up with particular information on it.”

“I generally use, almost exclusively use, PowerPoint.”

“....I’ve got such a large volume of material that I feel I need to get through, the only way I can do that effectively is to use PowerPoint.”

Some lecturers mentioned using a visualiser in addition to PowerPoint presentations.

Year 1 students found the use of PowerPoint appropriate for presentations but, as discussed earlier, felt there should be a balance between the amount of information on the slides and extra information provided during the lecture, for them to make notes on:

“I quite like the PowerPoint presentations.”

“....before I came to university, I assumed like that PowerPoint....it will be just the general thing, like the skeleton of the whole course....and like you make notes with it but, like, a lot of the lecturers just read off it....”

The need for some of the presentations and handouts to be updated was also highlighted:

“I don’t think some of the lecturers actually change any of the PowerPoint, ‘cos I know we’ve had pieces of paper handed out and they say like 1995 on the bottom of them....” [laughter in the group].

Year 2 students also felt that a PowerPoint presentation should be accompanied by further information and explanation from the lecturer:

“I think we’ve said before that....some lecturers just like read from it so if, you know, they use it as a prompt....maybe if they like presented more, like talked around it.”
3.5.3 Videos

Newble and Cannon (1994) recommend the use of video clips to generate interest in a lecture and when asked if there were any other visual aids they would like used during lectures, students in all 4 years mentioned videos.

**Year 1:** “...if you’re shown how the system works like on a video, it’s pretty good, it sort of clicks together.”

“It’s the difference between looking at words on a board than it is actually a picture of it, being able to visualise what’s going on....some people may be able to find that they can remember exactly what goes on with the image, rather than a line of text....”

**Year 2:** “Yeah, one suggestion, especially for guys who are more visual, like have videos accompanying the lectures....”

“Like use PowerPoint to, you know, prompt....and maybe like in the presentations....use videos....”

**Year 3:** “[subject] was actually quite good last year, the way they gave us videos....to watch.”

**Year 4:** “I like videos when they do it; they break it up a bit, make it a bit more interesting.”

**Year 4** students also talked about diagrammatic representations of work, rather than just words:

“I think diagrams are key as well.”

“Yeah, like mix it up, not just words all the time, like diagrams, illustrations, flow charts.”

3.5.4 Podcasts

**Year 2** students mentioned a lecturer having made a podcast which was made available on Victory for them to view as often as they liked. It was agreed that podcasts were particularly appropriate for subjects students found difficult to understand initially:

“But with something like [subject], you can’t just read it once and you understand it, you go over it again and again and again, and I think everyone found they did much better on that exam....”

**Year 4** students also mentioned the option of lecturers using podcasts:

“To use a podcast or something would help....they record it and put it on Victory and then you can listen over and over again to understand the concepts....”
They then discussed the danger that students would not attend lectures when a podcast was available. The feeling was that students would initially be tempted not to attend, but that they might find it difficult to discipline themselves to watch podcasts at home and would then elect to attend lectures in university. Another suggestion was that by using podcasts to deliver information, lecturers could use the time in the lecture theatre for more interactive teaching such as quizzes, to improve students’ understanding of the podcast material. The success of such a use of podcasts would of course be dependent on students being sufficiently self-disciplined to watch the relevant podcasts before attending lectures.

Newman (2010) reported that podcasts were used in over 40 UK universities and although considered useful for review and revision of work, where students had been surveyed, they wished to retain face-to-face lectures in lecture theatres.

3.5.5 Microphones

Clearly, students cannot engage with or benefit from lecture material if they cannot hear the delivery and the majority lecture theatres used by MPharm lecturers are fitted with both static and mobile microphones, which were used by most of the lecturers interviewed. Just one lecturer said he preferred not to:

“….generally speaking, I don’t use a mike or anything. I’m quite happy to use my voice, you know, shout away.”

Students expressed a preference for lecturers using microphones as they found it difficult to hear those who did not. They also discussed the fact that there were often problems with microphones not working properly and felt that their resulting inability to hear the lecture affected their learning:

Year 2: “And when someone give a lecture without a microphone and you can’t hear anything….”

Commenting on lecturers’ reaction to microphones not working:

“Like, “OK, I’m still going to carry on with my lecture, because I want to get through this, I need to get to this point, so….if you can’t hear, move further down, there are spaces further down” and you know, it affects our learning.”

Year 3: “….they don’t speak into a microphone and they get all upset when you tell them to speak up.”

“They start talking to the microphone and they’re talking for about 2 minutes and they start walking away!” [general laughter].

Year 4 also had difficulty hearing if lecturers did not use microphones, particularly in one of the largest lecture theatres:
“I know there always seems to be microphone problems in [lecture theatre], always....and then they [lecturers] turn it off, but....’cos it’s such a big room, you really struggle to hear.”

3.6 Directed Private Study

Students and lecturers both talked about directed private study (DPS) used to build on the material provided during lectures.

3.6.1 Quantity of DPS

All 4 years of students expressed concerns about the amount of DPS required by some lecturers:

Year 1: “.....some lecturers actually want you to go away with the books and actually go through chapter by chapter.... It’s just impossible to go away and learn a huge book [laughter]....I started it, but....” [more laughter].

“I like it [DPS], but there’s a hell of a lot of it. I find I’m struggling to keep up with directed private study for every lecture....”

Year 2: “.....some lecturers give a bit too much DPS and you’ve got other lecturers you have to do DPS for, so I think the volume matters as well.”

“.....we’re asked to....read text books and you know, do this extra reading that they expect us to do. Sometimes there’s not enough time to do that and I don’t think lecturers realise that....”

Year 3: “.....we had a problem with [lecturer] though, because it [DPS] was just way too many articles.”

“Yep, we all thought it was way too much....”

Year 4: “Too much, some lectures, there’s too much.”

“...I think sometimes, it can be very inconsistent, like you’ll get sort of 3 or 4 articles for one lecturer and they’ll give you that every single lecture and for some other lecturers, you won’t get any DPS....”

“.....some of them [articles] are actually stupid; they’re like 30 or 40 pages long and you can’t be bothered to read them, ‘cos they’re too long.”

In contrast to the opinions of the focus group students, the lecturers interviewed were under the impression that they gave reasonable quantities of DPS:

“I don’t overburden them with DPS.”

“It’s only sometimes; not every lecture will have associated DPS.”
“...I’m very much aware that us delivering DPS in a big piece of work post-lecture; it isn’t engaged with and it isn’t done....”

“There would be a very small amount of DPS after the lecture but it would be very minimal, ‘cos I recognise that they’re moving on very quickly to other subject areas and I wouldn’t want it to be any more than maybe just half an hour or maybe three quarters of an hour maximum....”

3.6.2 Knowing what is required

Lecturers spoke of asking students to undertake supplementary reading in the form of articles or chapters from text books and expecting students to relate such reading to the information provided in their lectures.

“In between the first 2 lectures, I give them a paper.....to read, to think about some of the background information on.....so that backs up the first lecture. Between the second and third lectures, I ask them to take what we’ve learnt in the second lecture....and to think about that, alongside reading...., so they can come and see the case I’m going to present to them in the third lecture and understand why I’m going through the process I’m going through....”

“I always tell them that they should consolidate their lecture notes after a lecture and if there is a suitable text book, or web page, then I will always give them that to read as supplementary reading.”

[Regarding review articles] - “....I give them the PDF file – it’s on the Victory site. They download, they read.”

“....you just refer them to a chapter in [text book] and they’re expected to go away and make sure they’ve got the fundamentals right of my lecture....”

As illustrated by their comments, students clearly found this type of task difficult, because they were not given specific instructions about what or how much to record:

Year 1 students spoke of difficulties with knowing if they were doing DPS correctly:

“We’ve never done this [DPS] before, so we don’t know how to do it.”

“When I’m on my own, I wonder if I’m doing the right sort of thing. I really don’t know.”

Year 2 students also voiced doubts about not knowing exactly what was required of them:

“The DPS....we had....when we ourselves researched some things, we didn’t know how much to write down....you don’t know what bits of information we’re meant to actually know....so maybe they should be a bit more specific.”

“Yeah, and sometimes, I’m at a loss when I’m doing DPS....I don’t know where I’m supposed to be looking exactly.” [murmurs of general agreement].
A discussion followed about a lecturer who provided page numbers relating to where the information they needed could be found, rather than asking the students to read the whole document and select the relevant information themselves. It was generally agreed that this was helpful and made the DPS more productive:

“….when you actually look at things and then figure them out for yourself, you feel a lot more satisfied than you do if it’s given to you.”

“Just so long as you know where to get it from.”

“And what they want from it.” [general agreement].

**Year 3** students were still experiencing problems with selecting relevant information from journal articles, and with finding information sources themselves:

“….some articles are like 10 pages long and you’re like, “What do you want me to know from this?””

“Sometimes you don’t know where to look up your DPS from….so you don’t know whether what you’re reading is the thing that they want you to read….“

### 3.6.3 Answering questions

Some students expressed a preference for question-based DPS, rather than just reading, as that focused their minds on what they needed to know and allowed them to assess their own knowledge and understanding.

**Year 2:** ”….if you just read something, you’re just reading, you’re not taking anything in.”

“….DPS is very good, but sometimes it’s just reading, it’s not answering questions whereas, answering questions, you know if you’re getting stuff right or not.”

“If it’s like reading a 30-page document, not very many people will do it, but if it’s like reading a paragraph and then answering questions….then that’s quite good.”

“….some lecturers did do multiple choice questions, like self-tests and things on Victory – that was pretty good.

**Year 3** students, like Year 2 students saw the benefit of having questions to answer as part of DPS, but admitted that not all students used the opportunity:

“What we don’t use to our advantage is…..when lecturers put up….on Victory, when they put up questions….but it’s formative, so not many people bother looking at them.”

Some lecturers spoke of providing questions, most commonly on Victory, for students to test their understanding of both lecture material and DPS:

“There are some MCQs available to you on Victory – have a go at them. If you’re struggling with those, read around the subject….“
“….tell them to go away, read this and then perhaps write down the answers to 20 questions....”

“What I sometimes do....is to give them a pre-lecture quiz, so I put some multiple choice questions on to Victory....they attempt them before they come into the lecture, have another go when they’ve finished, to try and reinforce the material we’ve covered...and the beauty of Victory is you can actually see who’s engaged and who’s taken these assessments.”

“...they’re asked to read a chapter [of a text book]. I then set them 20 multiple choice questions on Victory....”

3.6.4 Other issues with DPS

Other anxieties expressed, concerning DPS, were peculiar to students in particular years.

Year 1 students had realised that having been asked to complete DPS, they would not be chased up if they did not do so:

[Comparing with school] – “It’s a difficult transition, like having to do it yourself and have no-one like force you to do it.”

McMullin and Munro (2003) point out that students entering university following A levels are often ill-prepared for higher education with respect to study skills.

If reading was required, Year 2 students were more likely to read from the Internet than to use books from the library:

“....DPS from the Internet, I reckon I’m more likely to do it. If you have to go to the library and get books out, I’m much less likely to do that.”

“....you have to take time out to go to the library, whereas, the Internet, if you’ve got a free hour, you can just go out and do it....”

Year 3 students were concerned that ‘reading’ about something also meant they were expected to know about it:

“....it’s not just reading it – it’s learning it and remembering it.”

“Yeah, I think lecturers’ve got this image that we literally will read something and will remember it.”

Year 4 students found some of the articles they were required to read incomprehensible:

“A lot of it goes straight over your head and you think, “Why did I even bother, like, reading it?”

“It confuses us.”
3.7 Attendance and progression

3.7.1 Attendance registers

As stated earlier, registers were taken at a total of 131 lectures during the academic year 2007-8. As mentioned in Chapter 1, about 900 lectures are delivered each year to MPharm students at the University of Portsmouth School of Pharmacy and BMS, so the sample of lectures where attendance was monitored by the use of registers represented approximately 15% of available lectures. A further 11 lectures should have been subjected to registers, but were cancelled.

Although all lecture start times from 9am to 5pm were represented in the monitored lectures, the lectures were not evenly distributed across the start times, and varied from semester to semester, as illustrated in Table 3.1, which shows the percentage of the total lectures monitored in each semester, at each lecture start time.

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>10am</th>
<th>11am</th>
<th>12noon</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>30.1%</td>
<td>12.0%</td>
<td>13.3%</td>
<td>8.4%</td>
<td>10.8%</td>
<td>14.5%</td>
<td>6.0%</td>
<td>3.6%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Semester 2</td>
<td>31.3%</td>
<td>8.3%</td>
<td>12.5%</td>
<td>12.5%</td>
<td>16.7%</td>
<td>2.1%</td>
<td>4.2%</td>
<td>12.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Year 1</td>
<td>36.4%</td>
<td>9.1%</td>
<td>12.1%</td>
<td>12.1%</td>
<td>18.2%</td>
<td>0.0%</td>
<td>6.1%</td>
<td>6.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Year 2</td>
<td>23.5%</td>
<td>5.9%</td>
<td>11.8%</td>
<td>5.9%</td>
<td>11.8%</td>
<td>20.6%</td>
<td>14.7%</td>
<td>5.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Year 3</td>
<td>20.0%</td>
<td>16.7%</td>
<td>3.3%</td>
<td>10.0%</td>
<td>16.7%</td>
<td>13.3%</td>
<td>0.0%</td>
<td>16.7%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Year 4</td>
<td>41.2%</td>
<td>11.8%</td>
<td>23.5%</td>
<td>11.8%</td>
<td>5.9%</td>
<td>5.9%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Table 3.1, showing percentage of lectures monitored, at various times of day in semesters 1 and 2, and for each MPharm year.

Looking at the semesters, it can be seen that over 30% of lectures monitored were at 9am, in both semesters. During the year, only one lecture at 5pm (on a Tuesday) was subjected to a register, in semester 1, for Year 3. Year 3 was, therefore, the only year that experienced registers being taken at all the possible times of the day. As can also be seen from Table 3.2, Year 4 did not have any registers taken after 2pm and 41.2% of their registers were at 9am.
Thirty four members of staff teaching MPharm students had a register taken during at least one lecture in the year, with the number of lectures per member of staff ranging from 1 to 11. Neither staff nor students were informed beforehand that a register would be taken at a lecture. Chart 3.1 below shows the distribution of monitored lectures across members of staff.

![Chart 3.1](image)

Chart 3.1, showing the number of lectures at which registers were taken, per member of staff, during academic year 2007-8.

Monitored lectures were distributed across all 5 days of the week, as shown in Table 3.2 below.

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>28</td>
<td>31</td>
<td>23</td>
<td>26</td>
<td>23</td>
<td>131</td>
</tr>
<tr>
<td>%</td>
<td>21.4</td>
<td>23.7</td>
<td>17.6</td>
<td>19.8</td>
<td>17.6</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3.2, showing distribution of lectures at which registers were taken, across days of the week.

It can be seen that the lowest number of lectures was monitored for attendance on Wednesdays, when no teaching takes place after 1pm, and on Fridays. The reason for the relatively low level of monitoring on Fridays is unknown.
The distribution of MPharm lectures across days of the week and times of the day during 2007-8 is unknown. It might seem likely, given the limited number of suitably sized lecture theatres available, that they would be evenly distributed, but other constraints such as part-time lecturers’ availability and the requirements of other courses could be expected to influence the distribution of lectures. It is not known, therefore, if the sample of lectures at which registers were taken is representative of the MPharm lecture timetable.

Chart 3.2 below shows the average lecture attendance at different times of the day, for each day of the week. All years are included.

![Average lecture attendance on different days of the week, at each start time](chart)

**Chart 3.2, showing average percentage attendance at each lecture start time, on each day of the week, for all MPharm years, for academic year 2007-8**

As mentioned above, there is no teaching on the MPharm course on Wednesday afternoons, hence Wednesdays are only represented up to 12 noon.

It can be seen that the average lecture attendance was less than 50% at 9am on Fridays and at 10am on Tuesdays and Thursdays. As discussed in Chapter 1, the timing of lectures was
one of the reasons revealed in Challis et al’s (2009) interviews with students for low attendance levels at lectures. Students participating in the focus groups did not talk about difficulty with early morning lectures but lecturers, when asked why they thought students might elect not to attend lectures, expressed the opinion that students did not like attending early lectures because they had difficulty getting up in the mornings:

“Well, it might be that a lot of my lectures are at 9 o’clock or 10 o’clock.”

“Mornings overall, 9 o’clock start is a problem for them. For some reason they just can’t get up.”

“First thing in the morning, half of them aren’t going to turn up, ‘cos they’ve not got out of bed...”

A similar situation was reported in a response from a SoP that participated in the Scoping Exercise:

“Informal reports from teaching staff have indicated – early morning/late afternoon sessions – the number of students attending are down from expected numbers.”

Chart 3.3 below shows the percentage of students in each year who attended each of the lectures at which a register was taken, during semester 1 of 2007-8. A trendline has been added to illustrate how rates of lecture attendance changed over the semester. The number of lectures at which registers were taken and the maximum and minimum levels of attendance of each year’s student cohort is shown in Table 3.3.
Chart 3.3, showing percentage attendance at all the lectures monitored during semester 1 of academic year 2007-8.

<table>
<thead>
<tr>
<th></th>
<th>Number of registers</th>
<th>Maximum attendance (%)</th>
<th>Minimum attendance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>20</td>
<td>84</td>
<td>49</td>
</tr>
<tr>
<td>Year 2</td>
<td>22</td>
<td>92</td>
<td>35</td>
</tr>
<tr>
<td>Year 3</td>
<td>20</td>
<td>94</td>
<td>48</td>
</tr>
<tr>
<td>Year 4</td>
<td>21</td>
<td>85</td>
<td>37</td>
</tr>
</tbody>
</table>

Table 3.3, showing the number of lectures at which registers were taken during semester 1 of academic year 2007-8 and the maximum and minimum levels of attendance at those lectures.
Chart 3.4 and Table 3.4 illustrate similar information for semester 2.

Chart 3.4, showing percentage attendance at all the lectures monitored during semester 2 of academic year 2007-8.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of registers</th>
<th>Maximum attendance (%)</th>
<th>Minimum attendance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>13</td>
<td>81</td>
<td>53</td>
</tr>
<tr>
<td>Year 2</td>
<td>12</td>
<td>93</td>
<td>34</td>
</tr>
<tr>
<td>Year 3</td>
<td>10</td>
<td>95</td>
<td>48</td>
</tr>
<tr>
<td>Year 4</td>
<td>13</td>
<td>80</td>
<td>23</td>
</tr>
</tbody>
</table>

Table 3.4, showing the number of lectures at which registers were taken during semester 2 of academic year 2007-8 and the maximum and minimum levels of attendance at those lectures.

As stated in Chapter 1, one of the motivating factors to carry out this research was the repeated complaints by the author’s colleagues about low attendance at their lectures. Lecturers voiced similar feelings during their interviews:
“We’ve got a cohort of between 120 and 160 and I don’t think I’ve ever seen a full lecture theatre. I’ve rarely seen under 50% of the cohort but I’ve never seen more than 75% ....”

I’ve had as low as 50% attendance....”

“....sometimes it’s down as low as 60%....”

These lecturers’ observations concur with lecture attendance figures included in the work of Rodgers (2001), Massingham (2006) and Challis, Robinson and Thomlinson (2009). Of the 17 respondents to the Scoping Exercise, only 2 had no concerns about low attendance levels. The remaining 15 all expressed concern about reducing levels of attendance:

“Many staff report poor levels of attendance.”

“Some staff are concerned that about 1/3 of students don’t attend some lectures.”

“Can be poor at times – sporadic.”

“Informal reports from teaching staff have indicated, when chasing students to pass on messages – often students not in attendance when they should be - ....”

Attendance monitoring at lectures was already taking place at 7 SoPs. A respondent from another SoP reported increasing concerns about levels of attendance and the expectation that attendance monitoring would be introduced:

“This [lecture attendance] is drifting downwards.... The problem is worse in other School courses, and we may well introduce systems to monitor attendance in the next year or so.”

The concerns about levels of attendance at lectures voiced by the Portsmouth lecturers are also supported by the data illustrated in Charts 3.3 and 3.4 and Tables 3.4 and 3.5, although the range of attendance is wider than that suggested by lecturers. It can be seen that in semester one, the highest attendance at a monitored lecture was 94% of the student cohort and the lowest 35%, whilst in semester 2 the highest attendance was 93% and the lowest, only 23%.

It can also be seen from Chart 3.3 that attendance levels fell off over the course of semester 1, for all 4 years. This finding is in accordance with that of Challis, Robinson and Thomlinson (2009) who found that the estimated attendance of students at the University of Sheffield reduced over 10 weeks from 80-90% to 60% or less. One of the respondents in the Scoping Exercise also commented that whilst attendance was “typically 70%”, it “drops off as term progresses”.
As seen in Chart 3.3 and 3.4, the least reduction in the MPharm students occurred in Year 1, although, interestingly, their attendance at the beginning of the semester was the lowest. A variety of reasons for this are possible for this and the author, in her role as Year 1 tutor, witnessed Year 1 students arriving late to start their course, needing to sort out problems with accommodation, experiencing difficulties with using timetables, or simply not being able to find their way to lecture theatres. Years 2, 3 and 4 show a similar rate of reduction in lecture attendance across the semester, but Year 4 students’ attendance was consistently lower.

A similar picture of falling levels of attendance at lectures is seen in semester 2, for all the years except Year 1 where, although the rates of attendance varied from 81% to 53%, the trend across the semester was fairly stable, at just below 70%. Year 3 students’ attendance rate shows the sharpest decline across the semester and, as in semester 1, Year 4 students’ attendance was the lowest throughout.

The attendance of individual students varied from no attendance to 100%. This does not necessarily indicate that there were students who attended no lectures during the year, only that they did not attend the lectures where registers were taken which, as pointed out earlier, was only 15% of all MPharm lectures. Similarly, it is not known if the students who attended all the lectures at which registers were taken attended other lectures during the year.

The levels of average attendance of students at lectures on different days of the week is shown for the whole MPharm cohort in Chart 3.5 and broken down into separate years in Chart 3.6.
Chart 3.5, showing average percentage attendance at monitored lectures, of all MPharm students, according to day of the week, during academic year 2007-8.

Chart 3.6, showing average percentage attendance at monitored lectures, of individual years, according to day of the week, during academic year 2007-8.

It can be seen from Charts 3.5 and 3.6 that the average attendance for the MPharm cohort reduced across the week from Monday to Friday. The low level of attendance at lectures on
Friday by Year 4 students, seen in Chart 3.6, did not greatly affect the average attendance rate, seen in Chart 3.5, because only 2 Year 4 lectures, both in semester 2, were monitored on Fridays, so they form a relatively small part of the data.

The picture is more complex when viewed for individual years. Year 1 had fairly consistent levels of attendance in the middle of the week, with slightly lower attendance rates on Mondays and particularly Fridays. Year 2 students’ highest rates of attendance were on Mondays and the lowest levels on Wednesdays. In Year 3, there was some reduction in attendance across the week, and for Year 4, Wednesdays show the highest level of attendance, with Fridays appearing poorly attended. As already stated however, only 2 Year 4 lectures were monitored on Fridays.

When Challis et al (2009) interviewed students, they found lectures at 9am and 4 pm, or on Mondays and Fridays were all unpopular with some students. During this study, some lecturers suggested that Friday afternoons were particularly problematic as regards attendance, because of students wishing to go home for the weekend:

“….4 o’clock on a Friday afternoon, people will want to disappear home.”

“…..on a Friday afternoon because they want to catch the train to go home.”

“….going home at weekends, for a big family ‘do’....”

This belief would appear to be borne out by the data from the monitoring of lecture attendance.

One of the respondents to the Scoping Exercise reported that poor attendance at his SoP had been observed on Mondays and Fridays, and at 9am lectures.

Students in the focus groups did not admit to leaving early at the end of the week, other than one Year 4 student, who admitted usually missing lectures on both Monday mornings and Friday afternoons.

3.7.1.1 Further action taken

At the end of 2007-8, the attendance records of the 66 students with less than 60% attendance in semester 1 was reviewed, to ascertain if the interventions made had had an
effect. Of the 66 students, 35 (53%) had improved rates of attendance, in the case of 2 students (3%), there was no change, and the remaining 29 students (44%) had a lower rate of attendance than in semester 1. The findings are summarised in Table 3.5 below.

<table>
<thead>
<tr>
<th></th>
<th>Increased attendance</th>
<th>No change</th>
<th>Reduced attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>35 (53%)</td>
<td>2 (3%)</td>
<td>29 (44%)</td>
</tr>
</tbody>
</table>

Table 3.5, showing the lecture attendance rates of students following interventions

It can be seen that in more than half of the cases, students’ lecture attendance had improved following the interventions, but the difference between the number who increased their attendance (53%) and those in whom it reduced (44%) was small.

The 2 ladder plots below illustrate the difference in lecture attendance rates before and after interventions were made. Chart 3.7 shows students whose attendance rate reduced and Chart 3.8 shows students whose attendance rate remained constant or increased.

Chart 3.7, showing lecture attendance rates before and after interventions for students whose lecture attendance did not increase.
A wide variation in the change in lecture attendance can be seen, from no change to the greatest reduction in attendance, from 45% to 17%, a 28 percentage point reduction.

Chart 3.8, showing lecture attendance rates before and after interventions for students whose lecture attendance increased

Increases in rate of lecture attendance appear greater than the reductions shown in Chart 3.7. Increases range from 4 percentage points to 39 percentage points.

A paired t-test was used to ascertain the significance of the difference between the 2 groups – those whose attendance increased and those whose attendance did not increase. The null hypothesis was that there was no difference in the degree of change in lecture attendance, in the 2 groups of students. The alternative hypothesis was that there was a difference in the degree of change of lecture attendance in the 2 groups of students.

The calculated p value was 0.0043, indicating that there was only a 0.43% chance that the differences occurred by chance and that the null hypothesis should be rejected. The increase in lecture attendance was statistically significantly greater than the reduction in
lecture attendance, that is, the interventions did apparently have an impact on rates of lecture attendance. As stated earlier however, only 35 out of 66 students’ attendance increased. As the process of interviewing and letter writing was time-consuming and labour-intensive, as was the act of taking registers, which many teaching staff also found to be disruptive to their lectures, the practice was discontinued after one year.

Data collected by means of the Scoping Exercise showed that at one SoP, although no formal monitoring of lecture attendance took place, members of staff emailed students if they felt attendance at their lectures was low. One SoP stated:

“Repeat absentees are interviewed”

and another stated that students were interviewed by the relevant year tutor if they missed more than 3 lectures, but in both cases, no information was given as to the effects of these actions. Where an effect of lecture monitoring was reported, no hard figures were given. One SoP stated,

“Still less than perfect [attendance], but probably improved.”

At one of the SoPs where lecture attendance was monitored due to university regulations, the students were shown graphs to illustrate how poor attendance was, which improved the situation temporarily:

“Usually, when they see the expected standards slipping, there is a noticeable improvement. However, it does fall again...so regular reminders are needed.”

Two of the SoPs participating in the Scoping Exercise stated their intention to use the Fitness to Practise procedures, as discussed in Chapter 1, to address poor attendance by pharmacy students, as well as other aspects of behaviour during lectures considered unprofessional:

“Now we have formal Fitness to Practise procedures, concerns about whether the behaviour of some students suggests they are FtP.”

“We intend to use ‘Fitness to Practise’ protocols to address this problem.” [Poor lecture attendance].

3.7.1.2 Students’ and lecturers’ opinions regarding attendance registers

Lecturers generally voiced the opinion that they did not mind personally if students attended their lectures or not:
“….I’m offering people the opportunity to come and listen to what I have to say and benefit from it. They are buying that opportunity from me, financially. If they choose not to turn up on a particular day, I will not personally or professionally become upset by the fact that they are not there.”

“….it matters not to me whether they are there or not. I will get paid whatever happens.”

Most of the lecturers interviewed had experienced registers being taken during their lectures and had found the process disruptive and inconvenient. Some lecturers felt, however, that there was some justification for trying to make students view attendance at lectures as compulsory. Reasons for such opinions included students needing to learn during their first year that it is beneficial to attend lectures, the feeling that lack of attendance would ultimately damage their learning and reduce their professional competence, and an obligation to the tax payer to ensure that students take full advantage of their higher education opportunities:

“….I do think overall it would be of benefit, particularly for our first year students.”

“Only in the 1st year. If they come from a school background where bunking off is the done thing, I think they need to learn very quickly that actually, lectures are beneficial....”

“Subsequent to the 1st year, I take the view that they know what’s expected of them, they’re training to be professionals, it’s their responsibility and I think it damages the profession if you start making them sign a register every time they come to college.”

“....to an extent, we owe it to them to keep the net fairly tight on them to start with, so they get into the culture of higher education.”

“.... I don’t believe that we should have a situation where students have an option to opt out of a particular topic area because that could have implications for their professional practice and also for patient care in the future.”

“My feelings on that change almost on a daily basis. It really depends on ....how many turned up the last lecture.... There have been times when I’ve felt that we have an obligation to the tax payer, to closely monitor attendance....”

Seven respondents to the Scoping Exercise reported that the attendance of students at lectures was monitored in their SoPs. In 2 cases, this was in accordance with university regulations that required lecture attendance to be monitored, although one of these 2 SoPs only carried out 3 spot checks each semester, for each stage of the MPharm course. As mentioned earlier, 2 SoPs were using Turning Point, but neither mentioned how many lectures were monitored, although one said that most staff were using it. One SoP reported monitoring attendance “on an ad hoc basis, driven by individual lecturers”, one SoP reported
monitoring lecture attendance since 2007, but gave no further details and the seventh SoP reported some monitoring prior to 2010, but “a major increase in monitoring since Sept. 2010.” As reported above, one SoP believed attendance monitoring might be introduced “in the next year or 2”.

A Year 1 student suggested that registers could be taken, rather as he had experienced at school.

A second student voiced his thoughts on the matter:

“It kind of takes away from the independence of university if you have to basically monitor people like kids... whereas, universities, they don’t want to treat you like kids, you know. It would raise the attendance though, if they did.”

This student’s opinion that registers increase lecture attendance rates is shared by McMullin and Munro (2003) and when Year 1 students were asked if they would be more likely to attend if there were registers for lectures, there were several affirmative gestures and sounds.

“To encourage full attendance” was stated as the reason by one of the Scoping Exercise respondents for monitoring lectures in his SoP and at another SoP, although monitoring of attendance only began in September 2010, there had already been a noticeable increase in lecture attendance.

Some lecturers interviewed felt that students were adults and should be allowed to make their own decisions about whether they attended lectures:

“....I feel we shouldn’t have to tell adults to come and do what they need to be doing....”

“They’re adults! Make them realise, you’re paying for education, if you don’t make use of it, you’re squandering that. I feel strongly that we should try to motivate them to attend more on their own responsibility, without us pushing them.”

One of the respondents to the Scoping Exercise acknowledged that some of his staff were concerned but, like the lecturers above, he felt students should be treated like adults:

“Some staff are concerned that about one third of students don’t attend lectures. Personally, I am not concerned. They are adults and can decide what is useful for themselves.”

A Year 1 student also expressed the opinion that students should make their own choices and face the consequences:
“The thing is, we all pay money….it should be your responsibility….if you don’t want to bother turning up to lectures, should they have to force you? Like, it’s your choice, but if you screw up, it’s your fault....”

Yet another student raised the issue of the difference between attending and engaging:

“You’d attend [if there were registers], but would you pay attention? Like, if you’d be at home, making notes, doing your own private study, is that sometimes more productive than just sitting in a lecture, switching off, ‘cos you have to be there?”

The question of whether or not students obliged to attend lectures would benefit from them was also raised by some lecturers:

“.....you could force them to come to the lectures; you could make them sit there in the room, but whether you could make them engage or not....”

“We know they turn up to practicals because they sign the register and we’ve seen some of the performances in spot tests on pre-workshop work are truly dreadful, which means they haven’t done it. So, they’ve turned up, cos they feel they have to turn up, but they’ve not actually got anything out of it.”

“I suppose you’ve got more chance of making them engage if they’re there than if they’re not there at all.”

Lecturers who did not believe students should feel obliged by the imposition of registers to attend lectures felt that uninterested students would probably not engage and might even be disruptive:

“....the ones that are forced to attend, are they just going to start texting their friends in between and not pay attention at all?”

“....they’re there listening to their iPod or....you’ve got to make them want to come, I guess, if you think it’s useful to them.”

“I think if you make it compulsory, you’ve got a small element of uninterested students who might be disruptive.”

At one of the SoPs where lecture attendance was compulsory under university regulations, this was the case and the following comment was made:

“Some students who are now attending aren’t engaging!”

Students in Years 2 to 4 did not raise the issue of registers.

3.8 Reasons for poor lecture attendance

The problems of lectures on Fridays or early in the morning were discussed above.
3.8.1 Timing of lectures

The timing of lectures was found to be an issue by several researchers, including Hunter and Tetley (1999), Kottaasz (2005), Massingham (2006) and Chassis et al (2009) and focus group students in all years voiced dissatisfaction about the timing of lectures within a day, although there was little consensus about the best arrangement. A point that was made by all students, however, was that they would be likely to miss a single lecture that was separated from others by a long break.

Some Year 1 students preferred working at home to working on campus and that affected their decisions to attend lectures if there were long breaks between them:

“I think if it’s a 9 o’clock lecture and you’ve got a really big gap in between, then I’m free and I find it harder to work on university campus than I would at home, so I prefer to stay at home and then come in for the last lectures.”

“….if I had 3 hours off, I’d just go home….rather than going to the library and trying to study…."

Another Year 1 student made a comment about missing a single afternoon lecture separated in the timetable from a block of morning lectures:

“….if you know you’re there from say 9 ‘til 1, you’re more likely to be there for that block and think, “Right, after 1 o’clock, it’s my time”….whereas, if you’ve got a gap in between….you think, “Actually, I can’t be bothered to go to the one in the afternoon.””

A 3\textsuperscript{rd} Year 1 student expressed a preference for 2 hours of lectures, followed by an hour’s break:

“If it’s a block of lectures, with like an hour gap perhaps, like between every 2 hours, I’d be more likely to attend.”

Year 2 students made similar comments about disliking long breaks and failing to attend a single lecture separated from a block of lectures by a long break.

One student began the discussion:

“….we have like 2 or 3 hour gaps and it could be anywhere from like 9 to 6, so um…

A 2\textsuperscript{nd} student continued:

“Yeah….if you’re on 9-10, then 12-5 straight, you think you’re only missing an hour….."
A 3\textsuperscript{rd} student joined in:

“You don’t end up being able to plan, yeah.”

A 4\textsuperscript{th} student summarised their opinions:

“I think if there’s a massive gap in the middle of the day, people will just choose to come to the ones later on in the day and skip maybe the earlier ones.”

Another student commented on long gaps between lectures:

“The way the timetable’s designed – so, if you’ve got, say, a lecture 9 ‘til 10, then 5 ‘til 6, a lot of people will think, “Well, what’s the point of hanging around all day?””

A 2\textsuperscript{nd} student continued:

“I think it’s one of the bigger factors [timetabling], yes, ‘cos if there’s like one lecture from 9 to 10 in the morning, then not one ‘til later on, people aren’t likely to attend the first one – it’s too early. They might as well just come to the next one.”

An important factor for Year 3 students was being required to work all day with too few breaks: “9-6 is yeah, you just miss out lectures.”

“….because you can’t go from 9-6 and be completely focused the whole day and be able to take in everything with only 1 break, 2 breaks.”

“Yeah, it’s an hour break and an hour for lunch.”

Year 3 students particularly disliked lectures from 5 to 6 pm:

“….when it gets to 5 o’clock, you’re so hungry and so tired.”

“Yeah, it gets you really, really tired.”

“No, 5 to 6 is crazy!”

“I don’t like to go to the 5 to 6 ones....”

This problem was also highlighted by a lecturer:

“There’s the late afternoon - but I want to go home....”

When asked how they preferred lectures and breaks to be arranged in a day, unlike Year 1 and 2 students, Year 3 students expressed a preference for fewer, longer breaks in which they could do some work, rather than a number of shorter breaks:

“….what I don’t like is when you’ve got a break in the morning and then you’ve got another break in the afternoon. If you could combine them both together....”
“….some days we have like an hour 9 to 10, we have 10 to 11 off, an hour 11 to 12, then we have 12 to 1 off…”

“You know, that’s such a waste of time”

“But you can’t go home and you can’t do any work, you know, ‘cos you’ve not got time.”

“And if you do go home, then you don’t come back for the next one [group laughter].”

Year 4 students also talked about being dissatisfied with the arrangement of lectures during a day. Dislike was expressed for days with a series of one-hour breaks which they felt were disruptive:

“I’d rather have it sensibly spaced out….well, we have days when we have like 3, one-hour breaks....”

“We have loads of breaks and it’s like people are just going home afterwards, like they don’t stay for the afternoon.”

General discussion followed about the preferred arrangement of lectures. Some Year 4 students expressed a preference for about 3 hours of lectures, followed by a short break:

“Yeah,....have like 3 hours and one hour break.” [general sounds of agreement in the group.]

“Not like one hour, 2 hour break, one hour, 2 hour break....”

“Too many breaks kind of throw you off, sometimes.”

Other Year 4 students, like Year 3 students, saw advantage in having longer breaks in which to do some work:

“And the breaks aren’t even productive if it’s only one hour. You can’t do anything in one hour..... You have to have a couple of hours free to be able to do something productive within a break.”

Another student agreed:

“Yeah, so if there are breaks, it would be better if they were kind of like just put all together, rather than having them like separated.”

Lecturers were in agreement and some expressed strong views that the timetable could be inconvenient for students:

“….another reason why students might not attend is the abysmal timetabling and the fact that the timetabling seems to be almost uncontrollable....”
“I’d say our timetable doesn’t necessarily facilitate attendance in terms of the large gaps that they have….they may have a 9-10 session….and then nothing again until 2 or 3 in the afternoon and that’s wrong.”

“I think we need to have a radical overhaul in terms of how we deliver our courses in terms of timetabling….and make the timetable much more compressed during the times that they are actually in, then there’s greater incentive, so if they don’t turn up, they’re going to miss 3 or 4 hours of lectures.

One of the SoPs responding to the Scoping Exercise commented:

“Some students suggest that there is a timetable problem.”

3.8.2 Going out the previous night

Having been out and possibly drinking the night before was suggested by lecturers as a possible reason for poor attendance by students at early morning lectures:

“….there will be particular times or slots where students will not turn up because something has happened the night before....”

“....I do think that the time of stopping imbibing alcohol the night before could probably affect attendance the next morning!”

A Year 1 student agreed with some lecturers that going out the night before might affect his decision about whether to attend a 9 o’clock lecture:

“If you have a big night or something like that you know, (laughter), then that lecture doesn’t seem too tempting!”

A similar comment was made by a Year 2 student:

“If it’s 9 am and you’ve been out the night before....”

This was followed by laughter from the group and agreement:

“That’s the thing, yeah!”

Neither Year 3 nor Year 4 students cited going out the previous night as a reason for not attending the following day’s lectures.

The problem of students not attending lectures if they had been out the previous night was, however, raised, by a respondent to the Scoping Exercise:

“[attendance] drops off....on Thursday am, after Wednesday club night!!”
3.8.3 Dislike of lecturing style

Several lecturers acknowledged that students may elect not to attend certain lectures because of a dislike of their lecturing styles, but did not enlarge on which aspects they thought students might not like:

“….an individual’s lecturing style is not going to suit all students…”

“….they don’t like the way I present….“

“….your material and your style will not necessarily engage everybody.”

As previously highlighted, students expressed dislike of several aspects of lecturers’ styles of presentation in lectures. Being read to from slides, the handout, or a book was a strongly expressed complaint, common to all 4 years.

Year 1: “….if they’re just reading off the slides, then it’s pretty useless.”

Student agreeing:

“’Cos a lot of the lecturers just read off the PowerPoint, they don’t really give additional information, so you can do it yourself….”

One Year 1 student disagreed, as he thought it was worth attending lectures because he was paying to be lectured to by an expert:

“I think it’s not just the point you’re paying for lectures, but you’re paying for a lecturer who’s an expert in the field, so I think it’s worthwhile going, even if they don’t cover the information you want them to cover.”

Year 2: “Sometimes, you know, they just read a book, or on-line, or on the slides, you kind of feel like, “Oh, I can read, so why did I come?”” [Comment followed by laughter in the group].

“If they like read off the slides, you don’t really need to be there.”

“Yeah, you can do that yourself at home, so you wouldn’t really go.”

“….other lecturers are literally reading points off the slide and….people are less likely to attend those lectures.”

“If you can read it yourself, a lot of people don’t attend those lectures….“

Year 3: “….some of the lectures we go to, they just read off the slides, so we don’t really need to attend the lecture to do that….“

“….you get the lecturers that are there with their slides and just reading and reading and reading….“
“….they’re literally off the slide. I mean, there’s nothing additional....”

**Year 4:** “….for me, if lecturers say stuff that’s not on the handouts, I’ll be more likely to go [general sound of agreement from the group], because if it’s all on the handout, I’ll think, “Oh, I can stay at home.””

“Some lecturers just kind of repeat exactly what’s on the handouts, so it’s pointless.”

One lecturer recognised that students might not attend lectures if notes were available on Victory and no additional information was provided:

“….if they thought they were not going to get anything from the lectures that they couldn’t get elsewhere, if somebody just literally went and read through material they could get off Victory, then I think, if I was a student, I would think, “Hang on there, they’re just reading....why do I need to go?””

### 3.8.4 Dislike of lecture topic

Furedi (2009) believes that students might not attend a lecture if they are not interested in the topic covered, a view also expressed by some lecturers:

“Some students may not find my lecture material particularly interesting.”

“….they’re not interested in the topic....”

“[subject] is boring and students don’t like doing it....”

This reason was raised only by a **Year 2** student, who suggested interest in the subject as a reason for selecting which lectures to attend:

“….for some people, if they’re actually interested in that particular topic, they’ll attend it....I know some friends that will just go to particular lectures because it’s like interesting for them....”

Students in **Years 2, 3 and 4** were more likely to attend lectures on subjects they found difficult:

**Year 2:** “….if I have a subject where I’m weaker....then I’m probably more likely to go.”

**Year 3:** “….if I think it’s going to be a hard subject, or a hard exam to do at the end, I feel it’s better to go to those lectures....”

**Year 4:** “….if it’s a hard topic.....you’re more likely to make an effort.”
This reason for attending lectures was mentioned by Hunter and Tetley (1999) and Westrick et al (2009). Interestingly, one lecturer believed the opposite was true and that students failed to attend his lectures because they found the work difficult:

“….in the first few years, the students’….understanding of the area I taught was something they found hard to understand. I’m still teaching the same information but I’m doing it in a way that the students can relate to….and I think the students’ attendance has improved as a result of that.”

3.8.5 Ability to get notes from other students

Some lecturers believed that students sometimes preferred to get notes from other students, rather than attending the lecture themselves:

“….I’ll get notes from a friend….person X is very reliable….”

“….they perceive they can get notes from other students.”

A Year 3 student admitted he would get notes from another student rather than attend lectures if the lecturer dictated to them and expected them to write everything down:

“….other lecturers, they just dictate to you, so I’m like, “I’m not going; I might as well just get the notes off someone else, save my hand having cramp.””

Year 4 students admitted not attending lectures if they had not printed out handouts from Victory because they felt it was too difficult for them to write everything down in the lecture and they could not match their notes to the handout, when they printed it later.

3.8.6 Pressure of other work and revision

It was perceived by lecturers that when students had other pressures on their time, such as coursework to complete or revision for exams, attending lectures may not be their top priority:

“….close to exam time, we seem to see student numbers dropping off at lectures because at that time, they’re trying to revise….”

“….I think something we do have with our course is quite a big coursework load and I think that interferes with students’ ability to come along to lectures.”
“I think students suddenly find that they have to write a lab, or even an OSCE or something, or even the projects, towards the end.”

As discussed in Chapter 1, similar reasons for non-attendance were suggested by Hunter and Tetley (1999), McMullin and Munro (2003) and Kottasz (2005).

One of the comments from a respondent at another SoP also supported the view that students miss lectures if they have imminent assessments:

“Poor attendance close to interim and continuous assessments.”

Only Year 3 students, who were generally concerned about how full their timetable was, admitted to missing lectures in order to complete other work, such as pre-lab work:

“If you’ve got 2 or 3 labs in one week, you do not go to lectures, you don’t.”

“It’s ridiculous, yeah.”

“You tend to miss more lectures in those weeks where there’s so much pre-lab work as well. But I know loads of people who miss lectures because they’ve got so much work to do, they just can’t keep up....”

3.8.7 Other factors affecting lecture attendance

Several other reasons that might deter students from attending lectures were suggested by lecturers, including a lack of motivation; laziness; decisions about which topics they would revise for exams, or believing handouts contained sufficient information to pass an exam without attending lectures; the influence of other students with fewer lectures in their courses; and commitments and events outside of university, such as job interviews, family celebrations and illness. None of these factors was mentioned by students.

The view that students might believe they could obtain sufficient information without attending lectures was expressed by 3 respondents to the Scoping Exercise:

“Poor attendance by some – expectation that collecting a handout or downloading from Moodle [VLE] will be sufficient?”

“Relying on PowerPoints instead of attendance.”

“Some say it is because the notes are on line!”
3.9 The effect of lecture attendance on exam performance

Lecturers voiced a range of opinions about any correlation between lecture attendance and exam performance. Some lecturers expressed the belief that exam performance is definitely affected by lecture attendance:

[Regarding some research done with pharmacology students about 6 years previously] - “....there is quite a strong correlation. Not so much with the average mark but more with the number of credits passed at first attempt.”

“....it’s very interesting to see the correlation of ones that don’t attend that do fail - there is a definite correlation.”

“If they’re not attending and not getting the handouts, of course that is definitely going to affect their exam performance....”

The belief that there was likely to be a correlation between lecture attendance and lecture performance was also expressed by some respondents to the Scoping Exercise and given as a reason for monitoring lecture attendance:

“Evidence of poor attendance and a perception that it linked to academic performance. Wish to gather data to monitor and react.”

“We noticed a correlation between attendance and passing examinations. Students with Aug refers often did not attend regularly.”

Other lecturers interviewed felt less certain but reasoned that a correlation was likely:

“I would suspect that there is a correlation but I’ve got no hard evidence of that whatsoever.”

“.….it’s interesting when you see the students who have referred in exams and they don’t look particularly familiar from lectures. I think quite a percentage of them are not attending lectures.”

“I don’t know if there’s any research to show that there’s a correlation between it. I would say, “yes”, for various reasons. If they’re not there, there’s certain things they don’t pick up; they wouldn’t get as much out of the material [handouts] if it wasn’t being delivered with the extra discussion around it.”

Again, some of the responses from SoPs were similar:

“We feel that poor attendance is likely to lead to poor performance.”

“Expect that there may be a correlation between attendance and performance....”

One respondent to the Scoping Exercise appeared to link poor lecture attendance, poor exam performance and low ability:
“….it is usually the least able students who do not attend. These are the ones who perform worst in assessments.”

A number of lecturers interviewed viewed any assertion that exam performance and lecture attendance were related with caution:

“I haven’t seen any statistics that say if the attendance is better, will the failure rate be lower? So I don’t know…."

“What I haven’t seen is any direct correlation between attendance and student performance in assessment.”

“We all say this, don’t we? – “if you don’t attend the lectures, you’re not going to do very well”, but I must admit I haven’t read any hard evidence which shows that if students stay away from lectures, they will do particularly poorly.”

At one of the SoPs included in the Scoping Exercise, the respondent said he was not concerned about lack of attendance at lectures because students were able to “pick up lecture notes and podcasts from VLE”

3.9.1 Linking lecture attendance and exam performance

As described in Chapter 2, the data representing students’ exam performance at the end of academic year 2007-8 was linked to their lecture attendance to ascertain whether or not a correlation existed.

Chart 3.9 shows the average exam performance of each Year 1 student in academic year 2007-8, plotted against his lecture attendance rate. A trend line has been calculated and the equation of the line is shown above, together with the Pearson correlation coefficient squared ($R^2$) value.
Regression analysis, using Microsoft Excel ANOVA indicated some correlation between lecture attendance and exam performance, but the $R^2$ value is small, at 0.15 ($R = 0.39$). The $p$ value is very small, at $4.38 \times 10^{-6}$, but, as pointed out by Robson (2002) and highlighted in Chapter 2, this does not indicate the importance of the correlation. The equation of the trend line suggests that if the correlation was perfect (that is, if $R=1$), the average exam mark for a student who had attended no lectures would be 46%, with a student who attended all lectures achieving an additional 21%, that is 67%. The $R^2$ value of 0.15 however, indicates that only 15% of the difference in average exam marks (3.2%) can be attributed to lecture attendance, the remaining 85% being due to other factors. Based on this evidence alone, a student attending all lectures, rather than no lectures, would be expected to increase his average exam mark by 3.2%. This difference in exam performance between students attending no lectures and attending 100% of lectures appears less marked than in the work of Rodgers (2001) at an Australian university, where a student attending 74% of lectures was found to score between 1.3 and 3.4 percentage points less than a student with 100% attendance. As highlighted in Chapter 1 however, several researchers have failed to find a significant relationship between lecture attendance and exam performance and Moore (2008) concluded from a literature review that lecture attendance was neither necessary nor sufficient in support of academic performance.
The analysis of the data in this study indicates that whether or not students in Year 1 attended lectures or not had little effect on their average exam mark and it is concluded that most of the variation in exam marks is due to factors other than lecture attendance. The low p value indicates that a high level of confidence in this finding from the dataset is justified, as it is very unlikely to have occurred by chance.

As highlighted in Chapter 2, it can be difficult to observe the frequency of occurrence of observations, that is groupings or clusters, on a 2-dimensional scatter plot and Chart 3.10 below shows the same data plotted 3-dimensionally, to illustrate more clearly the variation in the correlation between lecture attendance and exam performance across the cohort of students.

![Year 1 - 3D correlation of lecture attendance and exam performance](image)

Chart 3.10, showing correlation of lecture attendance and exam performance for Year 1, academic year 2007-8.
Inspection of this chart shows a cluster of students (Cluster 1) who attend most lectures and achieved average exam marks around 60-65% and a slightly smaller cluster (Cluster 2), achieving similar marks whilst attending few lectures. It can be seen that the highest exam marks were achieved by students who attended most of the lectures (Cluster 3), but there are clear examples of students attending as few as 60% of lectures who achieved amongst the highest exam marks (Cluster 4).

Charts 3.11 and 3.12 show the correlation between lecture attendance rate and average exam mark for students in Year 2.

![Chart 3.11](image)

Chart 3.11, showing lecture attendance rate and average exam mark for each student in Year 2, academic year 2007-8.

For Year 2, again there is some correlation between lecture attendance and exam performance although the $R^2$ value is again small, at 0.13 ($R=0.35$). In this case, the equation of the line suggests that if there was perfect correlation, the average exam mark for a student who had attended no lectures would be 44%, with a student who attended all lectures achieving an additional 18%, that is 62%, but only 13% of that difference (2.3%) can be attributed to lecture attendance. The p value is $3.06 \times 10^{-6}$, again indicating a high level of confidence in the findings, which are unlikely to have occurred by chance. Below, the data has been plotted 3-dimensionally, to illustrate more clearly the clusters of variation in
the correlation between lecture attendance and exam performance across the cohort of students.

Chart 3.12, showing correlation of lecture attendance rate and exam performance for Year 2, academic year 2007-8.

Here a particular exception can be seen in that one student (Student 1) had an average exam mark over 70% and had apparently attended no more than 45% of the monitored lectures. There is a clear, albeit small, cluster of the best exam performers (Cluster 1), who had attended most of the monitored lectures and another clear cluster of students (Cluster 2), who had only attended about 50% of lectures and whose average exam mark was below 50%. It can be seen however, that those students achieving average exam marks in the middle of the range had attended anything from 50% to 100% of monitored lectures (Cluster 3).
Charts 3.13 and 3.14 show the correlation between lecture attendance rate and average exam mark for students in Year 3.

Chart 3.13, showing lecture attendance rate and average exam mark for each student in Year 3, academic year 2007-8.

For Year 3, $R^2$ at 0.23 (R=0.48) is larger than for Years 1 and 2, that is, the correlation between lecture attendance rate and average exam mark is stronger. The equation of the trend line suggests that a Year 3 student attending no lectures would achieve an average exam mark of 32%, whilst a student attending all lectures could achieve an additional 26%, an average exam mark of 58%. For Year 3, the $R^2$ value of 0.23 indicates that 23% of this difference (6%) is attributable to lecture attendance. The p value is again very low ($p = 6.18 \times 10^{-10}$), indicating a high level of confidence that the result drawn from this data has not occurred by chance.

The 3-dimensional plot below (Chart 3.14) illustrates more clearly the variation in the correlation between lecture attendance rate and exam performance across the cohort of students.
Chart 3.14, showing correlation of lecture attendance rate and exam performance for Year 3, academic year 2007-8.

In Year 3, a small cluster of students (Cluster 1) can be seen who attended over 70% of the lectures and only achieved exam results of 40-50%, but there is also a clear cluster of students (Cluster 2) with the highest lecture attendance rates and the highest exam results. As with Year 2, students achieving average exam results in the middle of the range attended between 50% and 100% of lectures (Cluster 3).

Table 3.6 below summarises findings for years 1 to 3, regarding the correlation between attendance at lectures and average exam performance.
### Table 3.6, summarising the correlation between lecture attendance and exam performance

<table>
<thead>
<tr>
<th>Correlation coefficient linking lecture attendance with average exam mark (R)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>0.39</td>
<td>0.35</td>
<td>0.48</td>
</tr>
<tr>
<td>Expected average exam mark with no attendance at lectures</td>
<td>46%</td>
<td>44%</td>
<td>32%</td>
</tr>
<tr>
<td>Expected average exam mark with 100% attendance at lectures</td>
<td>67%</td>
<td>62%</td>
<td>58%</td>
</tr>
<tr>
<td>Difference between no attendance and 100% attendance</td>
<td>21%</td>
<td>18%</td>
<td>26%</td>
</tr>
<tr>
<td>% of difference attributable to lecture attendance, as indicated by correlation coefficient</td>
<td>15%</td>
<td>13%</td>
<td>23%</td>
</tr>
<tr>
<td>Percentage points attributable to lecture attendance</td>
<td>3.20</td>
<td>2.34</td>
<td>5.98</td>
</tr>
</tbody>
</table>

#### 3.9.2 Reasons why students fail exams

As discussed above, lecturers expressed a range of opinions about whether or not lecture attendance would affect students’ exam performance. The view was expressed by some lecturers that there were students who could pass exams without attending lectures:

“….where you’ve got very able students, they might miss one or 2 and still be able to get a good grade.”

“….you get some students who are just very, very good and don’t need the lectures, can rely on text books and will do well.”

“….non-attendance is not necessarily the reason for failure as I have known students over the years who have not attended but have passed extremely well.”

Another opinion was that the reasons students failed exams were probably more complex than simply a failure to attend lectures:

“Yes. Whether that is a direct result of lectures – I suspect not. Everybody who correlates it says, “Well, they don’t attend lectures, therefore they don’t get the work, therefore they’re failing”. I don’t think that’s totally the root cause; I think it just demonstrates their general approach to learning.”

“I think we’ve got to be cautious about this correlation or supposed correlation between non-attendance and failure. Yes, they numerically add up, but I’m sure it goes a lot deeper.”
The findings of the investigation into whether a correlation exists between students’ rates of lecture attendance and their average exam performance, supports both the above points of view.

At the time the focus groups were conducted, Year 1 students had not yet sat any MPharm exams, but were of the general opinion that attending lectures would help them pass exams, although this appeared to be partly because they expected lecturers to give them hints about what would be on exam papers, a reason for attending lectures highlighted by Massingham (2006). The students expressed anxiety about not being told more precisely which material would be examined:

“….you don’t actually know what you’re meant to be learning and what is just there for, purely for random knowledge. It’s quite confusing.”

Their situation was compared with taking A level exams the previous summer when, the students claimed, the syllabus was very precise and they knew exactly what would be included in the exams.

When asked by the moderator if they were suggesting that lecturers should indicate which work they should revise, rather than being told it was all examinable, Year 1 students did appear to be hoping for that:

“I don’t think lecturers should give specific points, but they should say, “Well, this is relevant”, or “This might come up”.”

A student who had already completed a degree at another university said that he had been given more information than on his present course about what would be included in exams:

“….some lecturers would be forthcoming and say, “Oh, you need to know this and this”, and “I’ll be assessing that and that”, whereas, so far, in Portsmouth….no-one has said, “Oh, you need to know this”, or “That’s important”….it’s not giving any hints or….guidance as to what, how much….information you need to know.”

Year 2 students expressed a wish for more guidance from lecturers as to how much DPS would be examined:

“If it’s something that would link in with the exam, you’d know you were going in the right direction…”

“….you don’t know….what we’re going to be examined on and you have to do the whole thing, just to be on the safe side and sometimes, hardly any of it comes out. It’d be nice to know exactly what we need to know from DPS.”
It has already been mentioned that a Year 3 student said he would attend lectures for a topic he found hard and the perceived difficulty of the associated exam was included in this, suggesting that he felt attending the lectures would help him pass the exam:

“…..if I know it’s going to be….a hard exam to do at the end, I’ll feel like it’s better to go to those lectures…..”

Another Year 3 student also believed that he needed to attend lectures to pass exams in subjects where the information he needed was not available in a book:

“Like you can’t just use the book and pass; you need to go to his lectures, or you’ve missed out on it.”

When asked however, if attendance at lectures would affect their exam performance, some Year 3 students were quite sure it would not:

“No at all, not at all.”

“We know some people who don’t attend, not a single thing, and have passed with probably one of the highest marks.”

It was agreed that in some subjects, the students felt it was better not to attend the lectures:

“…..you know what, [name’s] lectures – I went to 3 of them….and I knew nothing, but I went home and within 40 minutes, I understood…2 lectures’ worth….there’s certain subjects that you cannot be taught it, you have to sit there on your own and do it.” [murmurs of agreement].

“…..with [subject], you can get a book, sit there, read it, you don’t need anyone to explain it to you…last year, the people who didn’t turn up to lectures, personally, I think they were the ones with the better marks.” [more murmurs of agreement].

Another student summed up the situation:

“I think each individual needs to grow up….and find out whether they do actually need to go the lectures, ‘cos I’m the sort of person who….I feel as though I’ve missed out on something if I don’t go to the lectures, but not everybody’s like that.”

In keeping with Years 1 and 2, Year 3 students expressed a wish for lecturers to hint at the most important material to learn for exams:

“It would be more helpful if the lecturer said the most important bits.”

“Yeah, it’s really helpful when they say….“Oh, this could be examinable.”
**Year 4** students, like Year 3 students, had concluded that individuals varied in their need to attend lectures in order to pass exams:

“….I think it depends a lot on the person, like, a lot of people don’t come to lectures, ‘cos they find they learn better if they just read it, whereas other people feel like they need to go to the lecture, because they need things explaining to them….so I think it depends on…your learning style.”

The views of both students and some lecturers that exam performance is not necessarily linked to attendance at lectures and that some students can do well in spite of attending lectures is supported by evidence from this study.

### 3.10 Top tips to improve attendance and engagement

At the end of each focus group, the moderators asked the students what their 3 top tips to lecturers would be, to increase student attendance at and engagement with lectures.

Year 1, Year 2 and Year 3 students all spoke of a wish for lecturers to engage more with them:

**Year 1**: “….actually kind of communicating with them [students], rather than just talking non-stop.”

**Year 2**: “….to engage with us more….not just come in, give a lecture and leave. If they engage with us and let us know they care about our learning, then we’re more likely to come to lectures.”

**Year 4**: “Interaction.”

“Be more approachable. [murmurs of agreement.]”

“Grab our attention.”

Students in both **Year 1** and **Year 4** wanted lecturers to be enthusiastic about their subjects:

**Year 1**: “….when you can tell the lecturer’s interested, it makes you interested as well.”

**Year 4**: “Be excited about what you’re teaching – make it seem like we’re missing out if we’re not there.”

**Year 1** students favoured lecturers taking some time at the end of a lecture to summarise the material delivered and to formatively test them on it:

“Have a summary page at the end.”
“....if the lecturer spends 5 or 10 minutes at the end of the lecture, going through what they’ve done and maybe going through a couple of MCQ questions....that would be very beneficial.”

**Year 2** students also recommended lecturers used formative assessment, in their case, to provide a different learning opportunity than simply didactic delivery of information:

“I’d say try and mix it a bit. Like, if you did have 10 minutes of formative assessment, going through at the start or the end.... It’s just something different....breaking it up into something different.”

**Year 3** students reiterated the view expressed earlier that they liked a balance between note-taking and listening:

“It would definitely be the balance between note-taking, you know, between all note taking, and some blanks, or nothing. I think the balance would be good.”

**Year 4** students also reiterated an earlier point that they wanted lecturers to be more specific about their DPS:

“....what we need to do afterwards [following lectures]....it has to be....”

“Specific, like you know what you....need to know....it’s not like, “Do I need to know that or do I not?” [some murmurs of agreement.]”

**Year 3** students made 2 requests which appeared to slightly contradict one another. The first concerned lecturers treating them like adults, rather than children as they were only just over 2 years off qualifying as pharmacists:

“I think lecturers have got this image that we’re like these teenage....that we’re some sort of yobs....”

“....we really do need to be treated like adults now, ‘cos if you think about it, in 2 years’ time, we’re going to be qualified and so they do need to talk to us like we’re adults.”

The second concerned lecturers apparently expecting them to know more than they did:

“I think maybe they need to stop diving in the deep end....”

“They shouldn’t have expectations that we know everything straightaway, that they’re talking about.”

“Their expectations are far too much for us.”

Other than the comments of Year 3 students, concerning lecturers’ expectations of and attitudes towards the students, all the ‘top tips’ relate to a desire for lecturers to engage and
interact more with students, to provide activities that enhance their learning and to give them more direction. It would seem that if lecturers wish to improve student attendance at and engagement with lectures, they must move away from the traditional, purely didactic mode of delivery.
3.11 Critique of study

As discussed above, the research strategies and research methods employed in a study must be appropriate for the research questions posed (Robson, 2002; Alasuutari, Bickman & Brannen, 2008) and it is believed that this was achieved. A pragmatic paradigmatic position was adopted and a mixed method research design employed, in the belief that quantitative and qualitative approaches can be complementary and that this study would benefit from using each approach for different purposes at different stages of the research. The advantage of a mixed methods approach, in common with the view of Denscombe (2007), was perceived to be the possibility of developing a more complete picture of the topic under investigation.

The author was aware at all times during the research of various aspects of rigour that must be addressed, particularly in respect of the aspects of the study where a qualitative approach was used.

The reliability of qualitative research and analysis is often questioned, because the researcher himself is often closely bound up with the research instrument, as in this study. The question then arises as to whether the finding would have been the same had a different researcher carried out the work (Denscombe, 2007). Knodel (1993) and Boyatzis (1998) both suggest that reliability may be enhanced by triangulation in the form of a team approach to analysis of focus group or interview data but. In this study, the student research team each analysed the focus group data for one year’s and their themes were compared and discussed with those of the main researcher who analysed the data for all 4 years. The interview data was analysed solely by the main researcher, due to constraints of time, funds and human resource. The researcher did however act as both data collector and analyst, which, according to Knodel (1993), can enhance the accuracy of the interpretation.

It is often argued that quantitative enquiry has a clear set of assessment criteria to enable readers to judge its validity, whereas, as Denscombe (2007) points out, it is impossible for qualitative researchers to prove absolutely that they have got it right. Rubin and Rubin (1995) and Denscombe (2007) highlight that it can be difficult to tell if an interviewee is telling the truth and personal emotions and feelings cannot be verified by reference to other people or sources. Denscombe (2007) suggests that data from different interviewees can be checked against one another for consistency and that confidence is increased when findings
are based on a number of interviewees’ views. In this study, focus groups and interviews were continued until it was judged that theoretical saturation had been reached.

Objectivity is the absence of bias in research which, Kairuz, Crump and O’Brien (2007) suggest, is pivotal to validity as it indicates that the research was conducted using fair and even-handed processes, and that it is impartial and neutral in terms of the researcher’s influence on the findings. As pointed out by Davies (2007) however, qualitative researchers are located in their subject context and cannot lay claim to neutral or scientific objectivity in the same way as quantitative researchers. As suggested by Denscombe (2007), the author attempted to make clear her own background and experience, whilst accepting that her identity, values and beliefs inevitably influenced the outcome of the research.

Creswell (2003) and Lacey and Luff (2007) advocate presenting negative or discrepant information to the reader to test the researcher’s interpretation and add credibility to the account and to this end, the researcher has reported variation in views and opinions whenever it was found.

As stated by Denscombe (2007), claims about the generalizability of qualitative research are limited because it cannot be subjected to tests of statistical significance in the same way as quantitative research findings. This study was intended to highlight the situation at University of Portsmouth School of Pharmacy and BMS, although the Scoping Exercise has enabled some comparisons to be made with other SoPs.

The advantages of using triangulation in research are seen by Arksey and Knight (1999) as providing confirmation and completeness in a research study. They also cite its disadvantages, including being time-consuming, being difficult to undertake replicative or comparative studies and it being tempting for researchers to make inconsistent data sets artificially compatible to produce a more coherent account. The same authors caution that combining results from different analytic perspectives or methods may offer a fuller picture, but not necessarily a more objective or valid one.

As discussed in Chapter 2, triangulation was not employed in this study, due to issues of time, funding and human resource.
Chapter 4

Conclusions and Recommendations

4.1 Conclusions

4.1.1 The purpose of a lecture

The traditional purpose of a lecture is the dissemination of information and both lecturers and students spoke of lectures serving this purpose, particularly when the information is not readily available from a single book or other source. Lecturers also saw lectures as providing an introduction to a topic, but this view was not expressed by students. Both lecturers and students believed that a lecture should prepare students to add to and enhance the lecture material, following a lecture. Lecturers also spoke of putting information into context with other aspects of the course and of instilling enthusiasm for a topic, but neither of these purposes of a lecture was spoken of by students.

4.1.2 What students do during lectures

Lecturers expected students to be listening to, thinking about, processing and trying to understand the information delivered during lectures. Whilst students expressed a wish to gain understanding, they felt this was often not achieved. The reasons students presented for their failing to understand lecture material were a perceived lack of interest on the part of some lecturers as to whether they understood or not and the way lecture material was delivered. Issues concerned with style of delivery included information being delivered too quickly, with no pauses for students to take notes or process material, and a lack of engagement with students on the part of some lecturers. Students spoke of lecturers avoiding eye contact, reading from notes or slides and making no attempt to check their understanding.

4.1.3 Interactive teaching

Lecturers held a variety of opinions about the possibility or desirability of interactive teaching during lectures, ranging from the assertion that there is little if any possibility of interaction with students, to the belief that lectures should be more like workshops, with formative assessment, demonstrations and group discussions all considered practicable. Students favoured interactivity as they felt it helped to maintain their interest and concentration and helped their understanding.
4.1.4 Questions during lectures
Both lecturers and students perceived difficulties with questions being asked and answered during lectures. If lecturers asked questions of students, they were unlikely to answer for fear of embarrassment if they gave the wrong answer and students were reluctant to ask questions of lecturers in case their question was considered silly. They also believed that some lecturers did not welcome questions being asked during lectures. Whilst lecturers expressed a wish that students would ask questions if they required clarification, as they thought it would also benefit other students, they acknowledged students’ reluctance to do so. It was suggested that lecturers might gather students’ questions and answer them on Victory or at the next lecture.

4.1.5 Note taking
Lecturers emphasised the need for students to make notes on the material they delivered during lectures. Students also perceived a need to make notes but sometimes had difficulty knowing what and how much to write down, a problem acknowledged by some lecturers. Students also wished lecturers would pause periodically for them to make notes, rather than speaking continuously.

4.1.6 Handouts
Most lecturers said they provided handouts of PowerPoint slides to which they expected students to add their own notes. Students claimed however, that some lecturers provided no additional information during lectures and in some cases, read to them from the handouts. Students preferred handouts to have spaces, giving them clear indications as to when they needed to make notes. They also liked handouts to be provided in booklet form, covering a whole topic, because it helped them organise their notes, but lecturers were moving away from this idea, both because of the need to constantly update and reprint material and because they felt it discouraged students from attending lectures.

4.1.7 Visual and other aids
Both lecturers and students generally preferred presentations delivered using PowerPoint. Most lecturers used microphones and students claimed to have difficulty hearing them if they did not. Podcasts were mentioned by students as being possibly helpful for review and revision of lecture material but few lecturers had used them. One respondent from another
SoP mentioned podcasts being available to students on the university’s VLE. Both students and lecturers expressed enthusiasm about ARSs that could be used for formative assessment. Students enjoyed the anonymity of responses. Two respondents from other SoPs stated that ARSs were used to monitor students’ lecture attendance, but this use was not mentioned at Portsmouth.

4.1.8 Directed Private Study
Lecturers believed the quantity of Directed Private Study (DPS) they required was appropriate, but students in all 4 years felt that some lecturers set too much. They also had difficulties finding information sources for DPS or selecting relevant information from books and journal articles. More guidance about DPS was requested, about what to do and how much would be examinable. Students expressed preference for question-based DPS, rather than just reading.

4.1.9 Late attendance at lectures
Late attendance was mentioned as a problem at 2 other SoPs. At Portsmouth, students were generally less concerned about this than lecturers and some students felt that leniency should be shown to late attenders because being late was sometimes unavoidable, due to transport problems. There was an inconsistent approach to dealing with late attenders by lecturers, with some refusing them entry to the lecture theatre and others preferring to avoid confrontation.

4.1.10 Talking and other disruptive behaviour
Talking during lectures was seen as disruptive to the learning of other students by both students and lecturers. In common with a respondent from another SoP who cited talking as a problem in the early years of the MPharm course, Portsmouth students spoke of more talking in Years 1 and 2 than in Years 3 and 4. Some lecturers felt the use of mobile phones during lectures was a problem, whilst others believed the incidence was reducing. Just one respondent from another SoP mentioned students texting and answering emails during lectures.

As with late attendance, lecturers expressed a variety of reactions to disruptive behaviour in lectures, ranging from making eye contact with the offenders to inviting them to leave the lecture. Students said they were less likely to talk during a lecture if they were aware that
the lecturer was watching them, but were critical of lecturers who threatened punishment but did not deliver it.

4.1.11 Reasons for disruptive behaviour
Students claimed to be bored during lectures where there was poor content or delivery and said that this led them to engage in disruptive behaviour such as talking or using phones. Lecturers attributed disruptive behaviour to students’ lack of interest in the lecture topic, or poor personal discipline.

4.1.12 Levels of attendance at lectures
Approximately 15% of MPharm lectures were monitored for attendance during 2007-8. Attendance rates were less than 50% overall at 9am on Fridays and at 10am on Tuesdays and Thursdays. A respondent from another SoP also reported low attendance at early morning lectures. At Portsmouth, the highest rate of lecture attendance recorded was 94% and the lowest 23%. Lecture attendance reduced over the course of each semester, a situation also reported by a respondent from another SoP. Levels of attendance of individual students at monitored lectures at Portsmouth ranged from none to 100%. Overall attendance also reduced from Monday to Friday, although there was more variation when individual years were inspected. Lecturers believed students often left early on Fridays to go home for family events.

Lecturers found registers at their lectures disruptive, although some felt they were warranted during Year 1, whilst students were adjusting to the independence of higher education. Although students, in common with lecturers, believed registers would increase attendance, they believed compulsory attendance might lead to more disruptive behaviour in lecture theatres.

4.1.13 Interventions
Sixty six students who attended less than 60% of the monitored lectures were written to and interviewed at the end of semester 1, in 2007-8. In 53% of cases, their attendance increased in semester 2, in 3% there was no change and in 44%, their lecture attendance reduced. A paired t test showed that the increase in lecture attendance following the interventions was statistically significantly greater than the reduction, but the resource commitment required
for monitoring lecture attendance and making interventions was considered unsupportable and the practice was discontinued after one year.

The ‘Fitness to Practice’ protocols that have been in place since September 2010 offer SoPs the opportunity to formally address poor lecture attendance by students, as well as other behaviour considered unprofessional. Respondents from 2 other SoPs expressed their intention to do so.

**4.1.14 Timetabling**

Both lecturers and students expressed dissatisfaction with the timetabling of lectures on the MPharm course. Whilst there was no clear consensus on the best arrangement, there was general agreement that a single lecture separated from a block of lectures by a long break discourages attendance at the separate lecture. Where there was a series of breaks, students in Years 1 and 2 stated a preference for short breaks because they were less likely to work on campus, whereas students in Years 3 and 4 preferred longer breaks, which they felt were more conducive to productive work.

**4.1.15 Lecture attendance and exam performance**

Lecturers expressed a wide range of views about a correlation between lecture attendance and exam performance, ranging from certainty that it existed, to a belief that it did not. Some respondents from other SoPs believed a correlation may exist, but provided no evidence. Students believed that some performed well in exams in spite of poor attendance at lectures and felt that whether or not an individual needed to attend lectures in order to pass exams, was dependent on his learning style.

For Years 1-3, data concerning students’ exam performance at the end of 2007-8 was linked to their lecture attendance. There was a low level of correlation for all 3 years, but regression analysis showed that in Year 1, for a student who attended all lectures compared to one who attended no lectures, only a 3.2% increase in exam marks was attributable to being present at the lectures. For Year 2 the difference was 2.3% and for Year 3 it was 6%. P values for all 3 years indicated it was very unlikely that this finding occurred by chance.
4.1.16 Student engagement with lectures

The reasons students gave for becoming disengaged with lectures, leading to disruptive behaviour, or non-attendance, were there being no need for them to make notes, because all the material was already available on a handout or in a book, lecturers delivering material didactically, rather than engaging with them, and their being unable to understand the lecture material.

Lecturers believed students failed to attend lectures when they had other work or revision to do and this was confirmed by students in Year 3. A respondent from another SoP also commented on poor lecture attendance close to assessments.

Things that helped students’ engagement were lecturers indicating where notes should be made, either verbally or by leaving gaps on handouts, providing some activities such as formative assessment exercises, and stimulating interest by relating material to students’ future careers as pharmacists. Although lecturers felt students were sometimes disinterested in the lecture topic, this reason for disengagement was only mentioned by one Year 2 student. Students were also more likely to attend and engage if they felt the lecture topic was difficult, or believed the exam would be difficult.

4.1.17 Top tips for lecturers

Tips were offered by students for lecturers to improve students’ attendance at, and engagement with, lectures. Year 3 students wished to be treated more like adults, but also recommended lecturers did not overestimate their levels of knowledge at the beginning of a lecture. Tips common to all years were for lecturers to engage and interact more with them, indicating that they care about the students’ learning; to appear interested in and excited about their lecture material; to undertake activities that increase and test students’ understanding; to expect students to make notes, but to provide indicators on handouts about when they should do so; and to provide more guidance about DPS.
4.2 Recommendations based on findings

Low levels of attendance at lectures have been demonstrated at the University of Portsmouth SoP and concerns about this and disruptive behaviour in lectures, indicating poor engagement, have been expressed by lecturers at Portsmouth SoP and reported by respondents at other UK SoPs.

Lectures are used as the main teaching method on the MPharm course at the University of Portsmouth, outnumbering teaching hours by all other methods, by 2:1. Although little direct correlation has been found between lecture attendance and exam results, if students are to maximise the learning opportunities offered by the MPharm course, they should appreciate the benefits of attending and engaging with those learning opportunities, including lectures, and lecturers experiencing low attendance levels should ensure that their lectures are a unique learning opportunity and endeavour to make their them more attractive to students. Recommendations to achieve these aims are outlined below.

As the GPhC has expressed an intention to require integration of undergraduate teaching and pre-registration training for pharmacy students in the future, it will be essential for students to understand the importance of lecture topics within the broader context of the MPharm course and this should be made clear, at the start of a series of lectures. It may be necessary to remind students of relevant information in Unit Guides, emphasising and clarifying it if necessary.

If, as it appears from the findings of this research, the style of delivery of some lecturers is not helpful in engaging students and providing a good learning opportunity for them, any training and development needs should be addressed by means of the peer review programme by which lecturers assess one another’s lecturing on an annual basis.

The GPhC, in proposing changes to MPharm programmes, suggests that there will need to be increased levels of clinical teaching if pharmacists are to contribute fully to dealing with future public health challenges and enable patients with increasingly complex medicine regimens to benefit fully from them. It is recommended that lecturers should review all the lectures they deliver with a view to discontinuing those that provide information that is available from other sources. Hence, more time would be made available to teach topics
where students have more difficulty compiling appropriate information, understanding the associated concepts, or making links with other aspects of their course.

Interactivity during lectures does not have to be on the scale of that provided during workshops, but there is evidence that students’ attention drops after 15-20 minutes and lecturers should consider adding some variety to lectures, to maintain interest. This could be achieved by activities such as working through a question, or providing a short quiz, to test knowledge and understanding. These should be linked to DPS as well as lecture content. Students were very positive about the use of an ARS for such purposes.

It seems unlikely that students will be persuaded to ask or answer questions during lectures, so lecturers should consider collating questions via email or Victory and providing answers, or guidance on where to find answers, on Victory.

As there is good evidence that taking notes during lectures improves students’ recall and exam performance, and students indicated that they like taking notes, lecturers should ensure that they do not provide all the information students need on handouts and leave spaces for them to add their own notes during lectures. Attention should also be paid to introducing pauses into lectures for students to assimilate, process and make notes on the information delivered, rather than lecturers speaking continuously, with no pauses.

Lecturers should review the amount of DPS required, ensuring it is in keeping with university guidelines, and provide sufficient instruction to students about what they are required to do, particularly for Year 1 students.

The arrangement of lectures within the timetable is not controlled by staff in the University of Portsmouth School of Pharmacy and BMS but it is recommended that tutors and lecturers stress to students the importance of using breaks between lectures effectively.

The required standards of behaviour with regard to rates of attendance, punctuality and behaviour during lectures should be made clear to students, from the start of their course, and all SoPs should be prepared to use Fitness to Practice protocols to address inappropriate behaviour. Should the University of Portsmouth SoP deem it necessary to monitor attendance for some or all students, use of the ARS should be considered for this purpose.
4.3 Suggestions for future studies

This study found only a weak correlation between lecture attendance and exam performance in MPharm students at the University of Portsmouth SoP, with results suggesting that between 13% and 23% of the difference in exam marks of a student who attended no lectures and one who attended all lectures was attributable to the rate of lecture attendance. It would be interesting to discover more about the other factors that affect students’ exam performance, with the aim of improving overall exam performance and reducing the number of referral exams.

Students who had experienced an ARS expressed positive opinions about their use. Since the research for this study was completed, Turning Point has been purchased by the Portsmouth SoP for use, initially, in Year 1. It is suggested that the experiences of both students and lecturers could be investigated, together with any changes in overall exam performance in Year 1. If the use of Turning Point is continued and extended to other years, this would warrant ongoing research, as it would be important to ascertain if attitudes and/or changes observed varied with time, or were in part due to the novelty of the system. If it is believed desirable to monitor the attendance of Year 1 students, Turning Point, already being used for this purpose in other SoPs, would provide a less labour-intensive and time-consuming means of doing so than using paper registers. With students owning their own handsets, it would be possible to carry out monitoring at all lectures, rather than just a sample, so providing more detailed data than was available for this study.

As it is likely that SoPs will be required to manage the learning of students, including addressing issues of student attendance, and with pharmacy students now subject to ‘Fitness to Practise’ procedures, the opportunity will arise to investigate the frequency with which these measures are utilised and to discover the effect on students’ attendance at, and behaviour during, lectures.
Chapter 5

Reflection on the DPharm

The DPharm represents for me the culmination of a long journey through higher education, embarked upon relatively late in life and ending after retirement from paid employment. The decision to study for a Professional Doctorate (PD) was taken following the completion of a Masters degree in 2002, when I was working as a Teacher Practitioner (TP) for Boots the Chemists. In addition to continuing to practise as a community pharmacist, the role opened up for me many new pharmacy-related opportunities, including teaching pharmacy students and pre-registration pharmacists, delivering training to overseas pharmacists newly arrived in the UK and health care assistants in residential homes, and supporting pre-registration pharmacy tutors. As Scott, Brown, Lunt and Thorne (2004) state, the aims of professional doctorates include the development of the individual in relation to their professional work and, as a TP applying my profession of pharmacy to several different roles, the DPharm seemed an ideal qualification to enable me to develop and enhance my professionalism in all aspects of my work.

5.1 Taught elements

The taught part of the DPharm was undertaken at the same time as I was working to attain a post-graduate certificate in higher education. Fitting the teaching sessions and the assignment work for both qualifications into a busy working schedule that involved a deal of travelling was challenging, particularly as time management, I recognise, is not my greatest strength.

Those early years of the DPharm opened my eyes to aspects of research about which I was previously ignorant or only vaguely aware, in spite of having completed a Masters degree. It was a shock to achieve only a bare pass mark in the statistics assignment and I realised that, if I was going to be able to appraise research papers when working in practise, preparing lectures, or undertaking doctoral level research, I needed to improve my knowledge and understanding. A further concern was that I already supervised 2 MPharm project students each year and my level of expertise in understanding and using statistical tests was clearly inadequate for that role. As a result of that experience, I undertook to improve these skills.
through private study. As well as improving my own understanding, an additional benefit was my realisation that MPharm students had similar limitations with regard to understanding statistics and I introduced it into analysis workshops for final year students undertaking research projects.

The work concerning qualitative data and its analysis was a revelation. Having a scientific background, my experience of research had been almost exclusively related to quantitative research and, knowing little about the purposes or applications of qualitative research, I viewed it with scepticism. Realising the nature and value of qualitative research has given me a more complete and balanced view of research and an improved understanding of the paradigms underpinning the different approaches.

As with the statistics assignment, I realised I needed a greater depth of knowledge about qualitative data collection and analysis and, in addition to undertaking further reading, I took the opportunity to join a ‘Qualitative Research Interest Group’ (QRIG), in the university’s Centre for Excellence in Teaching and Learning (CETL), known as the ExPERT Centre. In addition to providing a forum for discussion, QRIG members undertaking doctoral research presented their work for appraisal and comment, which enabled me to consider how I would conduct my own research and to evaluate and reflect on practical applications of the taught elements of the DPharm.

As a result of realising the value of, and my developing interest in, qualitative research, I undertook a number of qualitative projects with final year students and decided upon a mixed method research project for the DPharm, incorporating both qualitative and quantitative aspects of data collection and analysis.

The DPharm teaching about the analysis of qualitative data was entirely paper-based and involved physically cutting and pasting segments of transcripts. Although the process was effective, it required a good deal of space and organisation of piles of cuttings which I felt would be difficult to accommodate and maintain over a long period of data analysis time. I, therefore, devised a means of storing coded information in Microsoft Word files, so exchanging physical cutting and pasting for electronic copying and pasting. I subsequently became aware of software packages, such as NVivo and MAXQDA and attended demonstrations of their use. NVivo I perceived as complex to use, but I would possibly have adopted the use of MAXQDA, had I not have become already familiar and comfortable with
my own technique. If I were to undertake analysis of qualitative data in the future, I would revisit the use of a commercial software package before beginning data analysis.

### 5.2 Research project

Having completed the taught components of the DPharm, I needed to move on to begin the research stage. At this point however, I was still undecided about my research topic. This was in part due to having changed my role from that of TP to full time university lecturer. Not only did the subjects I had earlier considered for research now appear less relevant to my role, I also questioned whether I should have embarked on a PhD, rather than a PD, as this is the qualification more usually held by academic staff. Lee (2009) suggests that the implicit purpose of a PhD is preparation and training for a career in academia. As pointed out however, by Scott, Brown, Lunt and Thorne (2004), with moves afoot in the UK for PhDs to become more vocational and to have a structured first year, with a requirement for taught elements and key transferable and employment-related skills, the PhD is being brought increasingly into line with the PD. As I immersed myself in, and became more familiar with, my new role in academia, I concluded that a professional doctorate was as apposite to the role of a lecturer in pharmacy as to that of a practising pharmacist. Simultaneously, as I listened to colleagues bemoaning the low levels of attendance at their lectures, compared with workshops, where attendance was very high, my curiosity grew about the reasons for this and the DPharm research project was born.

Although I previously regretted the delay in deciding on a research topic, I now believe this may have profoundly affected the way in which the research questions have been addressed and answered. There has been an ever increasing interest in, realisation of the value of, and publication of, mixed method research during recent years, and the reasons for and arguments supporting such research have been discussed at length in the main body of this thesis, all of which stimulated my interest in such an approach to research and influenced the methodology of the study. If I had begun this research project earlier, I believe I would have been, at that stage, less convinced of the appropriateness of a mixed method approach and would have addressed the research questions differently.

The research project has been the most interesting and exciting part of the DPharm process for me. Prior to this study, I had only undertaken qualitative research as part of a teaching
process, either as part of the taught element of the DPharm, or during workshops. Having researched focus groups extensively, I was aware of the many associated potential pitfalls and it was pleasing that the expected numbers of student participants turned up on each occasion and, more importantly, participated actively in the focus groups. The interviews with lecturers were, again, very satisfying to conduct and produced rich data for analysis.

The quantitative work also had new aspects for me. I had not previously used 3-D charts to display data in more depth than by using scatter plots, but the 3-D feature is more easily accessed and used in the latest version of Microsoft Excel than previously and, I believe, was used to good effect in the study. Whilst I was aware of correlation coefficients, I also needed to further research their use and implications before employing them in assessing the effect of lecture attendance on exam performance.

It is probably a little unusual to have retired from paid employment before completion of a doctorate, particularly a professional doctorate and, when asked, as I sometimes am, why I am bothering, I reflect on that question. Partly, as I mentioned at the beginning of this chapter, this is the end of a journey, the pinnacle of a long climb up the ladder of higher education. Scott, Brown, Lunt and Thorne (2004) consider the factors that motivate individuals to undertake PDs. They refer to 2 main types of motivation – extrinsic, where an activity is driven by the prospect of external, tangible reward, such as accelerated promotion or enhancement of career prospects, and intrinsic, where the learner is concerned with self-determination and the intention to pursue a PD for its own sake. As far as the DPharm is concerned, I view myself as substantially intrinsically motivated, with personal fulfilment and a sense of accomplishment my main goals.

Looking back on my research proposal, it included the following statement:

“It is intended to disseminate the knowledge gained from this research to interested parties within the University of Portsmouth School of Pharmacy and Biomedical Sciences and to a wider audience via papers submitted to appropriate journals.”

My hope is that the doctorate will enable me to participate in publication (an area of DPharm teaching I have yet to exploit) and further research into pharmacy education. These are activities for which I have had little time during my professional career and would very much like to pursue during my ‘retirement’.
References


University of Portsmouth School of Pharmacy and Biomedical Sciences. (2006). Student handbook. Course information supplement (Ref. HB. Number C0733 Release 1.0).


Appendix 1 - Information sheet for focus group participants

**Student engagement with formal lectures on the MPharm programme at the University of Portsmouth**

**Student information sheet – focus group on your opinions of lectures**

You are invited to take part in a study concerning lectures on the MPharm degree course at the University of Portsmouth. Below is some information about the study. Please take time to read this information and ask the researcher if anything is not clear or you would like more information.

**What is the purpose of the study?**

The aims of the study are twofold:

1. to ascertain if there is a correlation between students’ attendance at lectures and their progression rates
2. to investigate students’ and lecturers’ opinions of lectures.

Your participation will contribute to the second aim.

The findings of the study will inform future delivery of the MPharm course at the University of Portsmouth as well as being disseminated to a wider audience within pharmacy education.

**Who is carrying out the study?**

The study is being conducted by Sue Rennison, Senior Lecturer in Pharmacy Practice at the School of Pharmacy and Biomedical Sciences, University of Portsmouth.

**What does the study involve?**

The first aim of the study will be achieved by quantitative analysis of existing data on lecture attendance and student progression rates.

The second aim will be achieved using student focus groups and one to one interviews with students and lecturers. These will each take up to an hour and will be recorded using both video and audio recorders for the focus groups and audio recording alone for the interviews.
How will data be stored and confidentiality maintained?

All data will be anonymised and remain confidential. Video and audio recordings and typed transcripts will not include the name(s) of the interviewee(s) and will be stored in a locked room in the University of Portsmouth. Results will be disseminated via publication. Please contact the researcher (details below) if you wish to receive a copy of the final study results.

Does the study have ethics approval?

Yes, the study has been approved by the University of Portsmouth’s Biosciences Ethical Committee.

Can I withdraw from the study?

You can change your mind and withdraw from the study at any time and should you decide to do so, all data provided by you will be removed from the study.

What are the benefits of participating in the study?

Your participation will contribute to research in pharmacy education and, therefore, has the potential to benefit future MPharm students. Refreshments will be provided before the focus group.

Researcher’s details

Name: Sue Rennison
Address: School of Pharmacy and BMS, University of Portsmouth, St. Michael’s Bldg, White Swan Rd, Portsmouth, PO1 2DT.
Email: sue.rennison@port.ac.uk
Phone: 02392 845665
Appendix 2 - Consent form for focus group participants

Student engagement with formal lectures on the MPharm programme at the University of Portsmouth

Focus group consent form

Students’ perceptions of and attitudes towards lectures

Thank you for agreeing to participate in this study, as a member of a focus group. The aim of the research is to investigate your opinions about lectures. The focus group dialogue will be recorded, transcribed and analysed but will be anonymised, ie your name will not be used at any stage of the project. Additionally, no part of the conversation will be repeated to another individual. Personal details requested from you will be used only to assess the effectiveness of the sampling strategy for the study and will not be used to identify you.

Please read the project information sheet provided, ask any questions you may have and when you are happy to do so, sign below.

1. I have read and understood the project information sheet and have had the opportunity to ask questions.

2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time without prejudice and without any data collected from me being used subsequently.

3. I agree to take part in the study.

Name ..............................................................................................................................................

Signature ...........................................................................................................................................

Date ................................................................................................................................................
## Appendix 3 – Focus group topic guide

### Student engagement with formal lectures on the MPharm programme at the University of Portsmouth

#### Focus group topic guide for moderator

<table>
<thead>
<tr>
<th>Topic</th>
<th>Potential questions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of lectures</td>
<td>What do you think is the purpose of lectures?</td>
<td></td>
</tr>
<tr>
<td>Attendance at lectures</td>
<td>What makes you attend a lecture?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why would you not attend a lecture?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you think attending lectures improves your exam performance or not?</td>
<td></td>
</tr>
<tr>
<td>What lecturers do in lectures</td>
<td>Do different lecturers do different things in lectures?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What do you prefer lecturers to do in lectures and why? (Ask them to name good and bad things)</td>
<td></td>
</tr>
<tr>
<td>What students do in lectures</td>
<td>What do you expect to do in a lecture?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you make notes or not and why?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you complete DPS and if so, when?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If not, why not?</td>
<td></td>
</tr>
<tr>
<td>Handouts</td>
<td>Do you prefer to have handouts or not?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If so, what sort of handout do you prefer?</td>
<td></td>
</tr>
<tr>
<td>Lectures compared to other teaching methods</td>
<td>Thinking about lectures and other teaching methods such as labs, workshops and tutorials, which teaching methods do you prefer and why?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4 – Seating plans for focus groups

1. Seating plan for pilot focus group (around oblong table)

2. Final seating plan for focus groups (small tables for audio recorders)

Key to symbols

- Moderator
- Moderator’s assistant
- Participant
- Audio recorder
- Video camera
- Table
Appendix 5 – Information sheet for interviewees

**Student engagement with formal lectures on the MPharm programme at the University of Portsmouth**

**Lecturer information sheet – interview about your opinions of lectures**

You are invited to take part in a study concerning lectures on the MPharm degree course at the University of Portsmouth. Below is some information about the study. Please take time to read this information and ask the researcher if anything is not clear or you would like more information.

**What is the purpose of the study?**

The aims of the study are twofold:

1. to ascertain if there is a correlation between students’ attendance at lectures and their progression rates
2. to investigate students’ and lecturers’ opinions of lectures.

Your participation will contribute to the second aim.

The findings of the study will inform future delivery of the MPharm course at the University of Portsmouth as well as being disseminated to a wider audience within pharmacy education.

**Who is carrying out the study?**

The study is being conducted by Sue Rennison, Senior Lecturer in Pharmacy Practice at the School of Pharmacy and Biomedical Sciences, University of Portsmouth.

**What does the study involve?**

The first aim of the study will be achieved by quantitative analysis of existing data on lecture attendance and student progression rates.

The second aim will be achieved using student focus groups and one to one interviews with students and lecturers. These will each take up to an hour and will be recorded using audio recorders.

**How will data be stored and confidentiality maintained?**

All data will be anonymised and remain confidential. Audio recordings and typed transcripts will not include the name(s) of the interviewee(s) and will be stored in a
locked room in the University of Portsmouth. Results will be disseminated via publication. Please contact the researcher (details below) if you wish to receive a copy of the final study results.

**Does the study have ethics approval?**

Yes, the study has been approved by the University of Portsmouth’s Biosciences Ethical Committee.

**Can I withdraw from the study?**

You can change your mind and withdraw from the study at any time and should you decide to do so, all data provided by you will be removed from the study.

**What are the benefits of participating in the study?**

Your participation will contribute to research in pharmacy education and, therefore, has the potential to benefit future MPharm students and the staff who teach them.

**Researcher’s details**

Name: Sue Rennison
Address: School of Pharmacy and BMS, University of Portsmouth, St. Michael’s Bldg, White Swan Rd, Portsmouth, PO1 2DT.
Email: sue.rennison@port.ac.uk
Phone: 02392 845665
Appendix 6 – Consent form for interviewees

Student engagement with formal lectures on the MPharm programme at the University of Portsmouth

Interview consent form

Lecturers’ perceptions of and attitudes towards lectures

Thank you for agreeing to be interviewed as part of this study. The aim of the research is to investigate your opinions about lectures.

The interview will be recorded, transcribed and analysed but will be anonymised, ie, your name will not be used at any stage of the project. Additionally, no part of the conversation will be repeated to another individual. Personal details requested from you will be used only to assess the effectiveness of the sampling strategy for the study and will not be used to identify you.

Please read the project information sheet provided, ask any questions you may have and when you are happy to do so, sign below.

1. I have read and understood the project information sheet and have had the opportunity to ask questions.
2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without prejudice and without any data collected from me being used subsequently.
3. I agree to take part in the study.

Name ........................................................................................................................................

Signature....................................................................................................................................

Date...........................................................................................................................................
Appendix 7 – Interview topic guide

Student engagement with formal lectures on the MPharm programme at the University of Portsmouth

Interviewer’s topic guide – lecturers

<table>
<thead>
<tr>
<th>Topic</th>
<th>Potential questions</th>
</tr>
</thead>
</table>
| Personal information         | M/F
How long have you been a university lecturer?
What subject(s) do you currently lecture on?
Have you ever worked at another university?
Have you every lectured on other topics? |
| Purpose of lectures           | What do you think a lecture is and what do you consider to be the purpose of lectures?                                                                 |
| Attendance at lectures        | Do you have any issues with student attendance at your lectures?
Why do you think students attend or don’t attend lectures?
Do you believe there is any correlation between lecture attendance and exam performance? (Any evidence?).|
|                               | Do you think there is any case for making attendance at lectures compulsory, as it is for some labs?                                                    |
| What lecturers do in lectures | What do you do in lectures?
Have you changed what you do in lectures, since you began working as a lecturer? (If yes, ask how).                                                  |
| What students do in lectures  | Have you ever had student behaviour issues in lectures?
What do you expect students to do in a lecture?
Do you expect students to make notes or not and why? |
| What students do after lectures| Do you expect students to undertake DPS following lectures and if so, what? If not, why not?
Do you assess DPS at any stage? |
| Handouts                     | Do you provide handouts? If not, why not?
If so, what sort of handout do you provide and why? |
| Lectures vs other teaching methods | Do you like lecturing? |
|                              | Thinking about lectures and other teaching methods, which teaching methods do you prefer and why?                                                  |
Appendix 8 – List of UK Schools of Pharmacy to which questionnaires were sent

Aberdeen
Aston
Bath
Belfast
Bradford
Brighton
Cardiff
Central Lancashire
De Montfort
East Anglia
Hertfordshire
Keele
Liverpool John Moore’s
King’s College London
Kingston
Manchester
Medway
Nottingham
Reading
School of Pharmacy, London
Strathclyde
Sunderland
Ulster
Wolverhampton
Appendix 9 – Questionnaire to UK Schools of Pharmacy

Student engagement with formal lectures on the MPharm programme at the University of Portsmouth – a scoping exercise

Please complete only ONE section of the questionnaire, in accordance with the instructions below and return the questionnaire to the University of Portsmouth in the prepaid envelope provided.

INSTRUCTIONS

Section A (PAGE 2)
Please complete Section A if your School of Pharmacy currently monitors MPharm students’ attendance at lectures.

Section B (PAGE 3)
Please complete Section B if your School of Pharmacy has previously monitored MPharm students’ attendance at lectures, but no longer does so.

Section C (PAGE 4)
Please complete Section C if your School of Pharmacy has never monitored MPharm students’ attendance at lectures.
Section A

Please complete this section if your School of Pharmacy currently monitors MPharm students’ attendance at lectures.

1. When did the monitoring of attendance at MPharm lectures begin?
   Date: 

2. Why was the decision taken to monitor lecture attendance? Please explain below.

3. Briefly describe the findings of monitoring students’ attendance at lectures.

4. Are you aware of any current concerns regarding MPharm students’ levels of engagement with MPharm lectures in your School of Pharmacy? Please tick the relevant circle.
   No ☐
   Yes ☐ Please explain the concerns below:

Thank you for your help with this research. Please return the questionnaire to the University of Portsmouth in the envelope provided.
Section B.

Please complete this section only if your School of Pharmacy has previously monitored MPharm students’ attendance at lectures, but no longer does so.

1. When did the monitoring take place?
   From (date):  
   To (date):

2. Why was the decision taken to monitor lecture attendance? Please explain below.

3. Why was monitoring stopped? Please explain below.

4. Briefly describe the findings of monitoring students’ attendance at lectures.

5. Are you aware of any current concerns regarding MPharm students’ levels of engagement with MPharm lectures in your School of Pharmacy? Please tick the relevant circle.
   No  ☐
   Yes  ☐
   Please explain the concerns below:

Thank you for your help with this research. Please return the questionnaire to the University of Portsmouth in the prepaid envelope provided.
Section C.

Please complete this section only if your School of Pharmacy has never monitored MPharm students’ attendance at lectures.

1. Are you aware of any current concerns regarding MPharm students’ levels of attendance at lectures in your university? Please tick the relevant circle.
   No
   Yes
   Please explain the concerns below:

2. Are you aware of any current concerns regarding MPharm students’ levels of engagement with lectures in your university? Please tick the relevant circle.
   No
   Yes
   Please explain the concerns below:

Thank you for your help with this research. Please return the questionnaire to the University of Portsmouth in the prepaid envelope provided.
Appendix 10 – Letter to Heads of UK Schools of Pharmacy

Name and address of HoS

Dear [Head of School],

As part of a doctoral programme of research, I am investigating students’ engagement with formal lectures on the MPharm programme at the University of Portsmouth School of Pharmacy and BMS. The aims of the research are to ascertain if there is a correlation between students’ attendance at lectures and their progression rates and to ascertain students’ and lecturers’ attitudes towards and opinions of lectures on the MPharm programme.

The study has been approved by the University of Portsmouth’s Biosciences Ethical Committee and all data collected will be anonymised and remain confidential. It is intended that the findings of the study will inform future delivery of the MPharm course at the University of Portsmouth as well as being disseminated to a wider audience within pharmacy education.

In order to place the situation at the University of Portsmouth into context with other UK Schools of Pharmacy, I would very much appreciate it if you would spare a few minutes of your time to complete the enclosed, short questionnaire and return it in the envelope provided. It is anticipated that the questionnaire will take no more than 10 minutes to complete.

Thank you for your cooperation.

Yours sincerely

Mrs Sue Rennison MRPharmS
Senior Lecturer in Pharmacy Practice
School of Pharmacy and BMS
University of Portsmouth
Email: sue.rennison@port.ac.uk
Tel: 02392 845665

Dr Adrian J Hunt MRPharmS
Deputy Head of School
School of Pharmacy and BMS
University of Portsmouth
Email: adrian.hunt@port.ac.uk
Tel: 02392 843541
Appendix 11 – Follow-up letter to Heads of UK Schools of Pharmacy

Name and address of HoS

Dear [Head of School],

I recently wrote to you requesting your participation in a survey I am conducting as part of a doctoral programme of research, investigating students’ engagement with formal lectures on the MPharm programme at the University of Portsmouth School of Pharmacy and BMS. The aims of the research are to ascertain if there is a correlation between students’ attendance at lectures and their progression rates and to ascertain students’ and lecturers’ attitudes towards and opinions of lectures on the MPharm programme.

If you have already responded and returned a questionnaire, please ignore this letter. If you did not respond to the original request, it would be greatly appreciated if you would complete the enclosed questionnaire. Only one page needs to be completed, in accordance with the instructions included.

I hope you will feel able to help me place the situation at the University of Portsmouth into context with other UK Schools of Pharmacy by completing the enclosed, short questionnaire and returning it in the envelope provided.

Thank you for your cooperation.

Yours sincerely

Mrs Sue Rennison MRPharmS
Senior Lecturer in Pharmacy Practice
School of Pharmacy and BMS
University of Portsmouth
Email: susie.rennison@gmail.com
Tel: 02392 346393

Dr Adrian J Hunt MRPharmS
Deputy Head of School
School of Pharmacy and BMS
University of Portsmouth
Email: adrian.hunt@port.ac.uk
Tel: 02392 843451
### Appendix 12 – Codes and themes generated from interview, focus group and scoping exercise data

<table>
<thead>
<tr>
<th>Metatheme</th>
<th>Theme</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>The nature and purpose of a lecture</td>
<td>Dissemination of information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introducing topics</td>
<td></td>
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