Review of Departmental Programmes of Teaching, Learning and Assessment

Self Evaluation Report

Dental School

January 2010
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1. **Introduction**

This Self Evaluation Report (2009/2010) for the University of Glasgow Dental School has been prepared by Professor Jeremy Bagg (Head of School), Dr Aileen Bell (Deputy Director of Dental Education), Dr Vince Bissell (Director of Dental Education), Mr Stuart Hutchinson (Administrative Officer), Mrs Martha Millard (Dental School Administrator) and Professor Richard Welbury (Director of Postgraduate Dental Education). Separate meetings incorporating small group workshops were held with staff members (6.11.09) and current students (18.11.09) as part of the reflective preparation. The penultimate draft of the document was made available to all staff and a student group via the School web-site for final comments before submission, together with a full discussion at a School Meeting on 13 January 2010.

1.1 **Range of provision**

1.1.1 At undergraduate level, the School offers:

- Bachelor of Dental Surgery (BDS) - current curriculum introduced in 2004.

1.1.2 At postgraduate level, the School offers:

- MSc in Primary Dental Care.
- MSc in Oral & Maxillofacial Surgery.
- MSc in Fixed and Removable Prosthodontics.
- D Clin Dent in Orthodontics.
- MSc (Dent Sci) Oral & Maxillofacial Surgery with Dental Education (new programme – currently no students).\(^1\)
- MSc (Dent Sci) Fixed and Removable Prosthodontics with Dental Education (new programme – currently no students).\(^1\)

1.2 **Concise background information on the Department.**

The School was formed as the School of Dental Surgery and Dental Hospital of Glasgow in 1879. The students sat examinations set by the Faculty of Physicians and Surgeons of Glasgow, but in 1947 the Dental School became affiliated to the University of Glasgow, which awards the BDS degree. The purpose built Dental Hospital & School in Renfrew St. was completed in 1931 and the Sauchiehall Street buildings in 1970. These two facilities, which are physically joined, together comprise the current premises.

The core business of the School is to produce high quality dentists to serve the Scottish population, and dentistry is one of the subject areas with an annual student intake dictated by the SFC (currently 87). The School was a stand-alone planning unit within the Faculty of Medicine until the current Faculty Divisions were established in 2002. Since then the Dental School has operated as one of the nine divisions within the Faculty. However, delivery of its academic functions is undertaken

\(^1\) Both of these courses have been developed specifically for a Faculty of Medicine agreement with Al-Fateh Medical University in Tripoli, Libya. The courses will also be suitable for other countries with recently opened dental schools eg Malaysia.
completely independently of the Medical School, and the School has retained its individual identity. Thus, the Dental School runs its entire educational programme, including curriculum design and management as well as related functions such as admissions, and has developed the infrastructure to function as a stand-alone School. In this respect it is very different from the other Divisions in the Faculty. The School has a major interface with NHS Greater Glasgow & Clyde, which is of great relevance to delivery of teaching because of the large volume of clinical work undertaken by dental students and the significant amount of NHS funding that supports delivery of the BDS curriculum.

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- Staff:Student Ratio for taught students is 1: 9.75
- The School's physical resources related to teaching, in addition to staff offices and the School Office, include:
  - William N Samuels Lecture Theatre (capacity = 127).
  - Jubilee Lecture Theatre (capacity = 87).
  - NES Postgraduate Lecture Theatre² (capacity = 80).
  - Seven seminar rooms (Capacities of 20; 18; 15 (x2); 12; 10 (x2)).
  - James Ireland Dental Branch Library (48 desk spaces and a computer cluster of 30 PCs).
  - A stand-alone computer cluster (18 PCs) on Level 8.
  - A biomedical science teaching class room (capacity = 50).
  - An undergraduate student common room.
  - A study area for taught postgraduate students (capacity of 20 – to be refurbished in January 2010 to support a capacity of 30).
  - A Pre-Clinical Skills Facility (capacity of 36 students with 2 tutors – undergoing extension and refurbishment in Spring 2010 to provide a final capacity of 46 students with 3 tutor stations and IT interconnectivity between all three rooms in the Facility).

² This Lecture Theatre is managed by NES, but may be booked by the University subject to availability.
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- Removable Prosthodontics Teaching Laboratory (capacity = 58) and a Fixed Prosthodontics Teaching Laboratory (capacity = 16).
- Orthodontics Teaching Laboratory (capacity = 14).
- A SimMan® Clinical Simulation Facility to teach life-support and resuscitation.
- An instrument decontamination training suite (capacity 10).
- Clinical dental facilities within Glasgow Dental Hospital & School:
  - 124 dental chairs distributed between the disciplines of Conservative Dentistry, Oral Medicine, Oral Surgery, Orthodontics, Paediatric Dentistry, Periodontology, Removable Prosthodontics, and Sedation. These are situated over five floors of the building.
- Dental Outreach Teaching Facilities:
  - Dumfries (6 chairs)
  - Kilmarnock (4 chairs)
  - Forth Valley – Carronshore (4 chairs) and Langlees (8 chairs)
  - Greenock (4 chairs)
  - Plean Street, Yoker (8 chairs)
  - Bridgeton (4 chairs)
  - Pollok (2 chairs)
  - Springburn (3 chairs)
  - Cambuslang (2 chairs)

The Dental School receives a devolved budget from the Faculty of Medicine for staff salaries, consumables and equipment. Strategic decisions on how these budgets should best be used to support teaching, learning and research are taken by the Dental School Executive (which includes the Directors of Dental Education, Postgraduate Education, and Research) with input and advice (fiscal and procedural) from the Dental School Administrator. In the current financial year (2009/10), a total consumables budget of £138,000 has been allocated plus an equipment budget of £20,000. The costs of undergraduate education are covered from within this allocation and, in the current year, the Central Education Budget has been allocated £30,000. The actual costs linked to undergraduate education are significantly more than this and some examples of costs for session 2008/09 are detailed below:

- Dental Materials & Equipment for Clinical Techniques Laboratory: £24,000
- Purchase of plastic teeth: £6,200
- Equipment maintenance: £4,000
- Staff travel, including travel to outreach centres: £4,000
- Cost of actors for teaching communication skills & OSCE exams: £5,000
- Cost of printing handbooks, competence sheets, portfolio reports: £3,500

It is worth mentioning that in recent years the Dental School has benefited significantly from access to slippage funds from within the NHS ACT (D)

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3 The centres at Greenock, Plean Street and Carronshore are contingency arrangements, pending completion of the construction and opening of new outreach centres in Paisley (at Royal Alexandra Hospital), Greenock (at Inverclyde Royal Hospital), Alexandria, Coatbridge and Campbeltown.
budget and has been able to purchase materials for undergraduate teaching from there. This source of funding is unlikely to be available in future years as NHS budgets become subject to the currently prevailing financial pressures.

There is no separate budget for undergraduate demonstrators, but the cost of these is not significant at approximately £2,000 per annum. The cost of undergraduate student travel to outreach placements is currently funded by NES, but from 2010 forward will have to be identified within the existing ACT (D) budget. This is estimated as approximately £75,000 per annum.

There is a separate earmarked consumables budget for PG (T) courses which was factored into the business plan for the introduction of the new programmes. In the current financial year, the budget for consumables and bench fees is approximately £89,000. About £56,000 of this total will be transferred directly to the NHS to cover the cost of provision of dental nurse support. The remaining budget will fund student travel costs, the cost of student materials, laboratory costs, attendance at courses and other appropriate expenditure.

Each of the 3 academic sections is allocated a small budget to cover general running costs, such as staff travel and stationery. The Administration budget is approximately £30,000 and has to cover the major running costs such as photocopying (approximately £10,000 per annum), subscription costs, eg the Dental Schools Council, (approximately £8,500) and the costs of furnishing and upgrading offices.

- It should be noted that the Dental School receives more funding for undergraduate dental education from the NHS through its ACT (D) (£8,753,000) and ACT M(D) (£600,000) funding than it does from the Scottish Funding Council (£6,182,000). This adds a considerable level of complexity to managing the overall funding (annual turnover of just over £17m), since it is so inextricably associated with both the local health board (NHSGGC) and NHS Education for Scotland (NES).

2. Overall aims of the Department's provision and how it supports the University Strategic Plan

2.1 In the broadest terms the Dental School’s main function is to produce BDS graduates. These graduates are able to apply for inclusion in the Dentists Register maintained by the General Dental Council (GDC) and therefore to practise dentistry in the UK. The vast majority then work in the NHS in Scotland. There is thus a clear alignment between the major aim of the School’s provision and the University’s commitment to sustaining and adding value to Scottish culture and society. In addition, the political importance of this aspect of the School’s provision cannot be overstated. The contribution to the wellbeing of the community extends also to the postgraduate programmes. The MSc in Primary Dental Care provides UK dentists with a means of further professional development. Many students on this programme are being supported by local Health Boards with the anticipated benefit of graduates working in close partnership with hospital based consultants in managed clinical networks and also, in some cases, helping to deliver outreach teaching to undergraduate dental students. The specialised clinical MSc programmes provide opportunities for overseas dentists to gain more advanced knowledge and
clinical skills, which will ultimately benefit communities in their home countries. It also satisfies the University’s ambitions to **increase the proportion of postgraduate students** and supports the **internationalisation** agenda.

2.2 Whilst the Dental School’s provision has a clear focus on meeting the dental health needs of various communities we aim to do this in a manner that recognises our role within a Higher Education institution striving to deliver excellence in learning and teaching in an environment enriched by research. Since the last DPTLA review the Dental School’s **approach to teaching, learning and assessment has been significantly influenced by the quality enhancement agenda** and the iteration of that agenda to be found in the University Learning and Teaching Strategy (L&TS). Thus the aims of the BDS programme (3.1) are expressed not just in terms of the need to produce competent practitioners but also in terms that reflect the desire to enhance the student learning experience and the life-long success of graduates.

2.3 University-wide priorities in relation to the Learning and Teaching Strategy (L&TS) have not always reflected well the priorities of the Dental School. For instance, student progression and retention rates in the Dental School have been amongst the highest in the University for a number of years and virtually all our graduates find employment. Nonetheless, we have sought to engage with the L&TS in these areas. An example would be the work we have done in relation to **Personal Development Planning (PDP)**, an important strand of the employability/graduate attributes theme. In addition our aims reflect a strong desire to: **widen access** to our programmes; increase our numbers of postgraduate and overseas students; **provide an intellectually challenging and well-supported learning experience**; conduct **robust assessment**; provide **feedback** that aids learning; and **promote excellence in teaching and learning amongst academic staff**. We have utilised the suggested Key Performance Indicators (KPIs) in measuring our performance in these areas, in particular student experience surveys, both internal and external (for instance, the National Student Survey), the results of which provide evidence both of marked success and the need for further work.

3. **An Evaluation of the Student Learning Experience**

3.1 **Aims**

**Description of the Department’s approach and practices**

3.1.1 The aims of the BDS and postgraduate programmes, as laid out in the respective programme specifications, are a direct reflection of the professional nature of the degrees and the need to produce **competent, caring, ethical and reflective dental practitioners**.

3.1.2 **The BDS is not credit rated** and, like the other five year professional degrees, is not mentioned in the SCQF. However, we believe that the aims of the programme are largely consistent with those of a level 11 qualification. The framework for Higher Education Qualifications in England, Wales and Northern Ireland\(^4\) corroborates this view:

> ‘First degrees in medicine, dentistry and veterinary science comprise an integrated programme of study and professional practice spanning several levels. While the

final outcomes of the qualifications themselves typically meet the expectations of the descriptor for a higher education qualification at level 7 [Masters level = level 11 in SCQF], these qualifications may often retain, for historical reasons, titles of Bachelor of Medicine and Bachelor of Surgery, Bachelor of Dental Surgery, Bachelor of Veterinary Medicine or Bachelor of Veterinary Science, and are abbreviated to MBChB or BM BS, BDS, BVetMed and BVSc respectively’

Evaluative Statement or Commentary

3.1.3 The aims of the BDS programme are entirely consistent with the overall aims of the School and the directives of the General Dental Council. As discussed above, the aims are also intended to reflect a quality enhancement approach.

3.1.4 There is, as yet, no consensus view amongst UK Dental Schools on credit rating of BDS courses, changing the degree nomenclature, or moving towards a Bologna two cycle system.

3.1.5 The taught postgraduate programmes have been re-introduced on a phased basis since 2007. The aim of these programmes is to deliver postgraduate education that is relevant and accessible for a variety of home and overseas dental practitioners. The delivery of these programmes supports the University’s agenda, both in relation to increasing the proportion of postgraduate to undergraduate students, and to internationalisation.

3.2 Intended Learning Outcomes (ILOs)

Description of the Department’s approach and practices

3.2.1 The Intended Learning Outcomes for undergraduate and postgraduate provision are outlined in the respective Programme Specifications and carried through into the Course Information Documents. They are also made available on the Departmental website.

3.2.2 The BDS programme Intended Learning Outcomes were developed for the 2004 Curriculum using two sources, namely the second edition of The First Five Years (the General Dental Council’s guidance document on the undergraduate dental curriculum) and the subject benchmark statement. We are therefore very confident that they reflect the intention of both documents and that they fully serve the aims of the programme in relation to its professional requirements. It can be seen, however, that they also address a number of key generic attributes, including those encapsulated in the programme aims.

3.2.3 The ILO’s for the individual taught postgraduate programmes were developed taking into account the following information:

- **MSc in Primary Dental Care**: the working Group of NHS Education for Scotland that considered the requirements for Dental Practitioners with Special Interests.
- **DClin Dent Orthodontics**: the Specialist Registrar Training Curriculum for Orthodontics of the Royal Colleges of the UK.
- **MSc OMFS**: the previous 2 year MSc OMFS curriculum at the University of Glasgow.
- **MSc FRP**: the successful template for the MSc FRP that had been created and used by Professor Fraser McCord in Manchester prior to his move to Glasgow.
3.2.4 The BDS is an integrated programme of study delivered over five years and the programme ILOs describe the knowledge, skills and attitudes the students should be able to demonstrate at the point of graduation. The programme is divided into five Courses, each of which corresponds with a Year of the programme. This division is somewhat artificial, having no intellectual basis other than allowing staged assessment of progress towards the final outcomes and providing an organisational structure. The ILO document is provided in Section (b) of the core documentation. We feel that the presentation of the ILOs in this format is more coherent than that in the Programme Specification. It can be seen that each ILO is supplemented with supporting outcomes. These describe the stages in the journey of attainment. The point in the programme at which each major outcome and each supporting outcome should be achieved is identified. In this way, the outcomes for each course are defined. Over five years the individual course outcomes build up to form a coherent set of programme ILOs.

3.2.5 In both undergraduate and postgraduate programmes we strive to achieve ‘constructive alignment’, that is, learning, teaching and assessment are driven by ILOs. Although not always successful, this principle is embedded in our entire approach and students are made aware of it at the outset. The ILOs for each course are published in Course Information Documents. Those responsible for delivering teaching activity are strongly encouraged to indicate to the students, in teaching materials, handouts and other teaching documentation, the ILOs addressed by the activity. Furthermore the alignment between teaching and ILOs is published on course Moodle sites. We stress to students that assessment will be directly aligned with ILOs and this very much ensures that they are aware of the central importance of ILOs. The BDS e-portfolio, developed in collaboration with NHS Education for Scotland (NES), has been designed to allow students to collate evidence of attainment in relation to the ILOs and the mechanism employed allows students to see how each ILO will be assessed. What they see is, in effect, an assessment ‘blueprint’. Students are also able to see, through the e-portfolio and other means, how their course ILOs build up into the programme ILOs.

3.2.6 Our External Examiners are sent a copy of the full ILO document on appointment. All assessment is blueprinted. An assessment blueprint is a matrix in which the ILOs are mapped against methods of assessment. For individual examinations this mapping is at the level of question numbers. Blueprinting the assessment scheme and individual examinations is the responsibility of the Course Coordinator but the blueprint should be reviewed by the Course Teaching Committee and the Board of Examiners. The blueprint for the programme assessment scheme for the BDS cohort graduating in 2009 is provided in Appendix 7.1. It shows in detail the coverage of the ILOs in the various components of the Final Examination. Such blueprints are sent to External Examiners prior to the examination diet, along with the draft question papers. Boards of Examiners should review blueprints over several diets to ensure that the ILOs are being adequately sampled and that there are no gaps in the assessment scheme.

Evaluative Statement or Commentary

3.2.7 As described above, staff are encouraged to relate all their teaching to ILOs. There should be no teaching, therefore, other than that designed to service specific outcomes. However, the ILOs for the BDS programme have been subject to review and minor adjustment since their introduction in 2004. Our experience of constructive alignment is that it is a dynamic process and that staff and student feedback changes

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3 Biggs J, 1999 Teaching for quality learning at University (SRHE and Open University Press, Buckingham)
opinion with respect to what is desirable and achievable in terms of outcomes. This process of review and adjustment is managed through the usual mechanisms of quality assurance. Whilst we may feel confident that all the teaching we deliver is related to outcomes, what is more difficult to assure is that every ILO is adequately addressed in our teaching and that the overall balance of our provision is correct in relation to the range of ILOs. Having successfully implemented the 2004 curriculum a review of alignment at this stage would be a logical step. However, the GDC is currently working on a new edition of its guidance on undergraduate dental education and this will be focused on outcomes. It is very likely that it will publish its own ILOs in 2010 and, if this is the case, it will certainly be necessary for us to review our own ILOs in light of the GDC’s recommendations.

3.2.8 The PG (T) programmes were introduced in 2007. ILO’s have been subject to review and minor adjustment as a result of student feedback after each academic year.

3.3 Assessment, Feedback and Achievement

Description of the Department’s approach and practices

3.3.1 The School’s approach to the quality assurance of assessment in the undergraduate curriculum is set out in the document Quality Assurance and Enhancement in the BDS Programme (Appendix 7.2). All assessment, including summative assessment, should generate feedback (3.3.16, 3.3.22).

3.3.2 All summative assessment within the School is conducted according to the Code of Assessment, which has been adapted to fit the needs of the School. For undergraduates, the document Assessment in the BDS Programme has been written to provide a guide for students to the process of designing and marking assessments in the BDS programme at Glasgow (Appendix 7.3). It includes Schedule A from the Code of Assessment, as adapted for use by the Dental School. Schedule B is used as it stands. The modifications to Schedule A reflect concerns expressed by GDC visitors at the last inspection of the Glasgow BDS programme in 2003/2004. At the time the visitors were concerned that Schedule A was not sufficiently applicable to a professional course where the determination of competence was the principal requirement of assessment. Secondary bands were not felt to be helpful or necessary. Consequently the Dental School does not employ secondary bands for assessment in the BDS programme and the verbal descriptors have been adapted to reflect the link between the knowledge assessed using Schedule A and the clinical competence which that knowledge should support. When the GDC re-visited the programme in 2005 they expressed satisfaction with these modifications.

3.3.3 All summative assessment for the postgraduate programmes is conducted according to Schedules A and B as published by the University. Secondary banding is used in the PG (T) courses to aggregate work into final gradings where there is weighting for the different summative components. The modification to Schedule A used for the BDS programme is not felt to be necessary for the postgraduate programmes, because the students have already been shown to have clinical competence sufficient for professional registration by virtue of holding a dental degree.

3.3.4 The fundamental principle which we seek to apply to all assessment is one of transparency:

- All forms of assessment to be used in the programme are published in course documentation.
• There is a clear link between assessment and ILOs.
• The methods used to set pass marks are clearly described.
• The criteria used in marking assessments are described in a variety of ways.

3.3.5 The methods of summative and formative assessment applicable to each course are set out in Course Information Documents. Blueprinting serves not only to confirm coverage of the full range of ILOs but also to demonstrate that the method of assessment used in relation to each outcome is appropriate and will allow valid inferences to be drawn about each candidate’s achievement. The methods of assessment employed are standard to clinical professional programmes:

• Written assignments and examinations used to assess knowledge and understanding
• Objective Structured Clinical Examinations (OSCE), in-course competence assessments and case presentations are used to assess clinical skills.

In aligning ILOs with appropriate methods of assessment an adaptation of Miller’s triangle6 helps to explain our approach:

3.3.6 We have moved away from essay questions in undergraduate examinations entirely and now employ objective questions such as Single Best Answer (SBA) multiple choice, Extended Matching Item (EMI) and Multiple Short Answer (MSA) questions. The current examination formats have only existed since 2004 for BDS1, whilst examinations for later years were developed sequentially as the curriculum was introduced. Objective question papers yield numerical scores and the nature of the judgement examiners are required to make is different to that used in relation to essay type questions. The most important task of the Board of Examiners in this

respect is to set the cut score, which represents the threshold for the award of a grade ‘D’. This is currently done using a recognised standard setting approach, either the Angoff method or a modification of it. The Boards then have the task of mapping scores onto the full range of grades, a process undertaken for each examination paper. Any aggregation required is undertaken following the principles of the Code of Assessment, applying appropriate weighting.

3.3.7 The **Objective Structured Clinical Examination (OSCE)** is a widely used format in medicine and dentistry and allows a wide range of clinical skills to be assessed in a single examination. **In-course competence assessment** is a method we have developed, based on a variety of other similar assessment types. The task to be assessed is broken down into stages; each stage is then assessed according to written criteria that are available to the students in advance. Students are required to complete a number of these assessments within each course but they may choose the precise timing depending upon when they feel they are ready to present themselves. An example of a Competence Assessment marking sheet and associated criteria is included (Appendix 7.4). The **presentation of a patient in an examination setting** is, again, a common format for the assessment of clinical skills. In the BDS programme the major assessment of this type takes place at the end of BDS4 and is a component of the Final Examination. The marking sheet (Appendix 7.5) makes explicit the link to intended learning outcomes and this is available to students via Moodle.

3.3.8 We employ **submitted coursework** sparingly as a means of summative assessment, and then only where appropriate to the ILOs. When used, these assignments are graded in their own right and are not aggregated with examination marks. Our approach is to use aggregation only where there is a clear rationale for doing so and the Code of Assessment obviously prohibits aggregation of grades from Schedule A with those from Schedule B. In consequence **examinations often have more than one component**, in each of which a minimum grade D is required for progression. It has been surprisingly difficult on occasion to explain to those with responsibility for governance of generic degree regulations why the outcome of BDS courses cannot be summed up in a single grade.

3.3.9 The balance of assessment with regard to the level of learning, as described by Bloom’s taxonomy, changes as students progress from BDS1 to BDS5, the intention in later years being to test the students’ ability to bring together many clinical skills, make complex clinical judgements and apply them to patient management. The range of summative assessment methods employed and the quality assurance measures described mean that we can be confident that our assessment is valid and reliable, and provides ample opportunity for students to demonstrate their achievement in relation to the ILOs.

3.3.10 **Assessment with a purely formative function** also takes a number of forms and these are, again, referred to in course documentation. One format we have developed within the School is the **formative assignment**, currently submitted via Moodle. Students complete between six and ten such assignments in each course. The assignments often require some research, the development and expression of an evidence-based argument and synthesis of knowledge gained from different elements of teaching. In this respect they address some of the generic ILOs (they are credible examples of enquiry-led learning) as well as specific subject based outcomes. Assignments must be submitted by a deadline, after which a specimen answer is posted. Students are then required to write a comparison of their

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submission and the specimen answer. Students receive no grade for this work. Feedback is sometimes given to the class with general points on the standard of submissions but the principal purpose is to develop students’ skills of self-criticism and self-assessment. Although they are not graded, these assignments are compulsory and mentors check that they have been completed. Anecdotal feedback from mentors suggests that the standard of submission is often quite high, as is that of the comparisons. Whilst students are initially puzzled by the requirement to submit work that is not subsequently graded they do seem eventually to appreciate the value of the approach.

3.3.11 Another model of formative assessment used in some courses is the Moodle quiz, although Course Coordinators report that they are time consuming to produce and maintain. There has been innovative use of peer assessment in some elements of the programme. For instance in BDS2 students are required to grade their own and peers’ work in the Prosthodontics pre-clinical skills course, using criteria they have developed themselves. There are plans to extend this approach to the Operative Dentistry pre-clinical skills course.

3.3.12 Formative assessment is conducted on a daily basis in most clinical placement settings. Students are awarded grades in relation to their performance of clinical procedures and with respect to generic attributes such as professionalism. A 1-9 scale is used where:

1-3 = Needs Improvement
4-6 = Satisfactory
7-9 = Superior

This grading scale is exactly the same as that used in Vocational Training (the compulsory 1-year period of post-qualification training organised by postgraduate NHS deaneries) in Scotland. The system used in Vocational Training is known as LEP – Longitudinal Evaluation of Performance – and is well validated. Its adoption by the School was based on a desire to demonstrate a continuum in the approach to clinical formative assessment from undergraduate to postgraduate. In the undergraduate setting the standard against which judgement is made is that expected at graduation. The benefit of this is that students should be able to see their grades improve as they progress from novice to competent clinician.

3.3.13 Good academic practice and plagiarism are addressed at the outset of the undergraduate programme. Dr Bissell, Director of Dental Education, discusses these areas in a lecture on Professionalism as part of the Induction Programme. Both postgraduate and undergraduate students receive guidance about plagiarism in course handbooks. The Dental School uses a Declaration of Originality Form which both UG and PG students complete and sign when submitting some of their assignments. This confirms that they have read and understood the guidance on plagiarism in the student handbook, including the University of Glasgow Plagiarism Statement. They must acknowledge that they have clearly referenced all sources, not made use of other students’ work without acknowledgement, not sought or used the services of professional agencies and that they understand any false claims in respect of this will result in disciplinary action.

3.3.14 In the undergraduate programme the students complete a formative assignment on plagiarism in BDS 1. The assignment reads: Plagiarism is a serious offence which may lead to expulsion from University. Explain what you understand by plagiarism and describe what measures can be taken to try to avoid it. The students complete the exercise and then compare their answer with a model answer. This is the very first formative assignment. Formative assignments may be checked by Student Mentors and discussed at Mentor Meetings. Any evidence of plagiarism within a Mentor’s particular group would be noted and addressed.

3.3.15 The plagiarism detection software Turnitin is used for selected assignments throughout the BDS programme. The postgraduate courses do not use this software at present. Turnitin is not being used with the current BDS 1 students after losing the staff member who trained the students to use it, but it is hoped that a new trainer will be in place for next year.

3.3.16 We have attempted to improve our performance in providing feedback to students following assessment in several ways: the formative assessment methods described above are all designed to generate feedback; we have introduced class feedback sessions following mock examinations which have proved popular; we have encouraged students who have failed examinations to seek one-to-one feedback from Course Coordinators; and clinical teaching staff have been encouraged to give feedback as part of the continuous clinical assessment process described above. These actions have, regrettably, led to little improvement in student satisfaction.

3.3.17 Despite the apparent limitations of the feedback provided our students are actually extremely successful. The vast majority pass examinations at the first attempt and of those who do not, most pass at the second attempt. Progression and completion rates are therefore very high. Grades are reported via the Annual Course Monitoring process and although there are fluctuations these have not been marked.

We can be extremely confident that standards achieved by students meet the expectations of the award and the requirements of the General Dental Council for the reasons set out in section 4 of this document.

Evaluative Statement or Commentary

3.3.18 Objective questions are difficult to write, hence our question bank for the 2004 curriculum is growing only slowly. However, they are much easier to mark and, indeed, our SBA papers are now optically read. The size of the question banks means that we feel unable to release past papers at present. However, we do provide mock examinations in all years so that students can become familiar with the style and level of questions.

3.3.19 Results from the National Student Survey and from our own course evaluation allow some limited confidence that students find the criteria used in assessment clear and perceive assessment to be fair. The 2009 NSS outcomes showed a disappointing dip in this regard, especially since the document Assessment in the BDS Programme (3.3.2) had been written and distributed during the session and all years had been addressed by the Director of Dental Education on these issues. However, the cohort graduating in 2009 were the first to go through the 2004 curriculum and, being at the forefront of development, they were admittedly not always given timeous information of the quality and clarity that we would now hope to provide. Provision of quality information about assessment, well in advance, is stressed in the Dental Education Committee as an essential element of course management. However, we are
continually reviewing the effectiveness of our approaches in light of the feedback we receive.

3.3.20 A difficulty with continuous clinical assessment in the Dental School is the many individuals involved in awarding grades. There is inevitably a good deal of subjectivity about the judgements that are made and achieving consistency amongst graders is extremely difficult. Even if more detailed criteria were available the sheer volume of judgements required would make their use problematic. However, students are advised in an entirely open way that this inconsistency is likely to arise. The grades awarded serve no purpose other than to provide them with a personal indication of how they have performed (the only exception to this is in relation to Professionalism, where a score of 1-3 will trigger further action). It is stressed that the most important aspect of the process of formative assessment is that they learn from it and that, in this regard, the discussion that should occur with the person awarding the grade is far more important than the grade received.

3.3.21 The version of Turnitin in use at present is no longer linked to Moodle. Originally students could submit from Turnitin to Moodle but this is no longer the case, and they are required to use Turnitin and then submit to Moodle separately. Technically they could submit a different piece of work and the two submissions should be checked by staff. This takes a considerable amount of staff time. However, our approach is to use Turnitin as a predominantly educational rather than monitoring tool.

3.3.22 Our failure to satisfy the students completely in delivery of feedback has been reflected across the range of assessment. We have recently conducted, with the assistance of the Learning and Teaching Centre, focus groups with students and also sought input from staff at a recent school-wide meeting in an attempt to understand the fundamental reasons behind this disappointing student perception. Some tentative conclusions might be:

- Students do not always realise when they are being given feedback.
- Despite our best efforts many students seem unwilling to take responsibility for their own learning. They do not, therefore, actively seek feedback.
- We have failed to adopt a systematic approach to providing feedback on submitted work and on examination performance.
- There are resource issues, principally staff time, which act as barriers to the provision of feedback.
- Some staff may not have been adequately trained in providing feedback.

It must be remembered that during the period since our participation in the NSS began the Dental School has been in a period of considerable transition and upheaval, with the introduction of a new curriculum taking place. Staff have been fully engaged in the delivery of a new timetable and new assessments, therefore feedback has been afforded a lower, probably insufficient, priority. Furthermore, poor performance in relation to feedback is a problem across the sector, including the UK dental schools. Notwithstanding these facts, attempts at improvement through a general raising of awareness have produced inadequate results and a more purposive approach is required. Our strategy for improving feedback to students is provided in Appendix 7.6 and is also mentioned in Section 6 of this report.
3.4 **Curriculum Design, Development and Content**

**Description of the Department’s approach and practices**

3.4.1 The Dental School has recently completed the development and implementation of an entirely **new BDS curriculum** (the ‘2004 curriculum’), from which the first cohort of students graduated in July 2009. This was in response to a critical review of the previous curriculum by the GDC in the mid 1990s. The new curriculum was designed to address the concerns raised and, in particular, to:

- Improve integration between the teaching of clinical subjects and their scientific basis.
- Help students to develop the skills of life-long learning; that is, the ability to act upon learning needs identified through reflection.
- Allow earlier patient contact.
- Increase the emphasis on team dentistry.
- Include a significant element of ‘Outreach’ teaching.
- Emphasise reflective learning and the development of key generic skills.

The **Curriculum Development Group** adopted an approach similar to that described by Cowan and Harding⁹, first defining the comprehensive Intended Learning Outcomes (3.2), based on a clear understanding of the aims. Recognising that the new curriculum would require a considerable degree of reorganisation, a framework was established within which further development could evolve easily in the future. It was decided to accept that the approach to learning in many aspects would remain broadly similar, as would methods of teaching. Initially, therefore, the emphasis was on aligning content and assessment with the ILOs. However, there are numerous examples of innovation in teaching that have emerged as ‘bottom-up’ developments during implementation (3.7), demonstrating that the ‘framework’ approach appears to have been successful. Students were fully involved in the working groups that developed the ILOs and curriculum content and were consulted formally as part of the course approval process.

3.4.2 The structure and features of the BDS programme are described in the Programme Specification. A key aspect is the presence of **vertical curriculum “themes”**, which are now well aligned with the new Dental School Section structure, outlined in the Core Documentation. The Education Lead in each Section is responsible for ensuring the coherent development of each theme over the five years of the Programme. In the large section of Clinical Dentistry this task is delegated to leads for particular clinical disciplines. Integration of the vertical themes with the horizontal course structure occurs via personal liaison between Section Education Leads and Course Coordinators, and by Section representation on Course Teaching Committees. The Course Coordinator should look to maximise the integration between themes during each year of the programme. In developing the 2004 curriculum, and in particular as part of the consideration that governed the staging of supporting outcomes, the Curriculum Development Group sought to align development of the vertical themes as closely as possible over the programme, thus maximising the potential for

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integration. Monitoring of this is now undertaken by the Dental Education Committee, which includes student members.

3.4.3 A very important element within the curriculum is the emphasis on, and development of, **reflective learning**. Clearly this is a key skill for Personal Development Planning (PDP) and the system adopted by the Dental School is facilitated and compulsory. Each student is assigned a **mentor** (3.6.4) at the beginning of the programme. Students complete three formal written reflections each year as part of their portfolio. In BDS 1 and 2 these are based on teaching episodes and the students are provided with a framework of questions to stimulate and help them record their reflection. In later years students choose what to reflect upon and this is usually a clinical event. Written reflections are submitted and read by each student’s mentor. Five or six students form a discussion group led by their mentor. Mentoring meetings occur shortly after the submission date for the written reflection. During the discussion students are encouraged to share experiences, expand upon their reflection and identify learning needs. After the group discussion students meet with their mentor individually, when discussions about learning needs continue, in confidence, on a one-to-one basis. Submission of written reflections and attendance at mentor meetings is compulsory. Although reflection is not assessed, students are graded on their contribution to group discussion.

3.4.4 We regard the ability to learn through reflection as a key professional as well as generic skill. Other graduate attributes are developed during the programme and, indeed, are written into the ILOs:

- Have knowledge of, and apply, the **broad principles of scientific research and evaluation of research** that are necessary for an evidence based approach.
- Demonstrate approaches to teaching and learning that are based on **curiosity and exploration of knowledge** rather than its passive acquisition.
- Demonstrate a **desire for intellectual rigour**, an awareness of personal limitations, an ability to provide and receive constructive criticism and a willingness to seek help as necessary.
- Be able to manage learning in the context of establishing a philosophy of **continuing professional education and development**, such that professional competence is maintained over a practising lifetime.
- Be competent at **communication** with patients, other members of the dental team and other health professionals, verbally and in writing.
- Be competent at the use of **information technology** as a means of communication, for data collection and analysis, and for self-directed learning.

3.4.5 The ability to reflect purposefully and to identify and address learning needs is essential to attaining many of these outcomes; it is central to our approach to encouraging students to assume responsibility for their learning. There are, however, other elements within the curriculum that encourage this student-centeredness, under which roof we would include **Enquiry Based Learning**. Examples would be the submitted formative assignments (3.3.10) and elective projects (3.6.15). The latter require students to produce a project protocol and report that may have a
research focus (an example is provided in the Core Documentation). There is also a variety of elements of small group work throughout the programme that adopt a clinical problem solving approach.

3.4.6 A feature of the 2004 BDS curriculum is the proportion of clinical teaching delivered in outreach settings. This amounts to somewhere in the region of 20 weeks, the majority of which (16 weeks) occurs in BDS 5. This is sited in community health centres (1.2), many of which have either been refurbished or newly built for the purpose. This development provides students with:

- Experience of working in a primary care environment, thus aiding the transition from University to practice.
- A patient case mix more representative of population health needs than that presenting in a dental hospital.
- An environment in which holistic care can be more easily practised.
- The opportunity to work more closely, and in a more realistic environment, with other members of the dental healthcare team.
- Experience of working in remote and rural, and socially deprived areas.

The centres have been developed and staffed in partnership with local health boards and this has been made possible as a result of Scottish Government funding administered by NES. The University and its students have gained considerably from this partnership, as have the health boards. Students are providing care for under-served areas of population, recruitment to clinical posts has been enhanced as a result of the link to outreach teaching, and these clinical staff have benefited from career enhancement as a result of health board-funded participation on part-time Dental School MSc programmes.

3.4.7 Clearly there are challenges in assuring quality when teaching is delivered at numerous dispersed sites. We have approached this by ensuring that outreach teaching is incorporated fully within our QA mechanisms (3.7.5) and by adopting a more proactive enhancement approach. A senior academic staff member has responsibility for outreach, and visits centres on a rotational basis for two days each week.

3.4.8 As stated above the outreach experience is a transitional one between University and practice. Practice for most of our graduates is likely, in the first year, to mean Vocational Training (VT), a compulsory year of work-based training administered and quality-assured in Scotland by NES. The Dental School has close links with potential employers, particularly the local Health Boards and the NES Vocational Training Directors. We obtain feedback about our students and graduates through regular meetings involving these organisations and that feedback influences the review of curriculum content.

3.4.9 All of the taught postgraduate programmes include the core course, which comprises units covering Basic Science, Health Sciences and Research Sciences and is worth 60 credits. The MSc in Primary Dental Care is a 3 year part time programme aimed at home students. The first year comprises the Core Course, the second year a 60 credit Specialty Course (Endodontics, Periodontics, Fixed Prosthodontics, Removable Prosthodontics, Orthodontics, Paediatric Dentistry, or Special Care Dentistry), and the third year a 60 credit audit/research project. The
remaining programmes are designed to cater for overseas postgraduate students. The MSc in Oral & Maxillofacial Surgery (OMFS) is 2 years full time and has 10 (20 credit) Specialist Courses and a Research Course (100 credits). The MSc in Fixed and Removable Prosthodontics (FRP) is 2 years full time and has 5 (40 credit) Specialist Courses and a Research Course (100 credits). The MSc's in OMFS and FRP with Dental Education (3 years full time) have an additional first year comprising the core course and an education course before starting their specialist and research courses. The total credit ratings for the courses we offer are summarised in the following table:

<table>
<thead>
<tr>
<th>Programme</th>
<th>MSc (PDC)</th>
<th>MSc (OMFS)</th>
<th>MSc (OMFS with Dental Education)</th>
<th>MSc (FRP)</th>
<th>MSc (FRP with Dental Education)</th>
<th>D Clin Dent (Orthodontics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core course credits</td>
<td>This course is common to all taught postgraduate programmes and bears 60 credits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical specialty credits</td>
<td>60</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>380</td>
</tr>
<tr>
<td>Research / audit credits</td>
<td>60</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total credits</td>
<td>180</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>540</td>
</tr>
</tbody>
</table>

**Evaluative Statement or Commentary**

3.4.10 There is no doubt that a considerable proportion of the teaching in the BDS curriculum is traditional and didactic in nature. However, this reflects the fact that much of that teaching is directed towards essential clinical skills. The demands of the regulator mean that, in terms of content, the curriculum is intense. Approaches to teaching reflect not only tried and tested methods but also the most efficient use of resources to deliver the breadth and depth of outcomes required. Notwithstanding this, however, there are numerous examples of innovation, developed in large part by enthusiastic individual staff members. Many of these are relevant to the desire expressed in the University Learning and Teaching Strategy to promote Enquiry Based Learning. There is more scope for such development but the framework provided by the 2004 curriculum permits this and as the organisational structure associated with that new curriculum settles, staff will have more time to contemplate how approaches to teaching can be modified to enhance the student learning experience.

3.4.11 Innovation in teaching and learning will hopefully be aided by the activity of the newly established Dental Education Research Group which, through its support for individual staff projects, journal clubs and related academic activities will promote scholarship within the School (3.7.4). Of great significance in this respect are developments in relation to e-learning. The Dental School is a partner in the national
NES-funded project entitled Collaborative Learning Environment Online (CLEO), and employs both an E-Learning Scientific Development Officer and an E-Learning Systems Developer, funded by NES for three years, to develop high quality electronic learning objects for the national repository that is being developed for dental education across Scotland. In addition, the Dental School is a main partner in a large-scale project with the Glasgow School of Art Digital Design Studio and the Faculty of Biomedical & Life Sciences to develop a 3D digital anatomical model of the anatomy of the head and neck. When completed, this high resolution data set will be used as a basis for e-learning materials to illustrate common oral disease processes and to develop haptic devices for simulator teaching of clinical skills such as administration of local anaesthetic injections, in addition to its obvious application to the teaching of anatomy.

3.4.12 There is good evidence to suggest that the Dental School’s efforts to address what we can now categorise as ‘Graduate Attributes’ have been successful. Scores in the ‘Personal Development’ section of the NSS have been consistently high. The questions in this section relate to self-presentation, communication and problem-solving; the BDS programme develops these skills almost as a by-product but they are also, to a large extent, written into our ILOs. Our emphasis on reflective learning develops skills that underpin personal development planning. We have thoroughly evaluated our approach. Whilst the results, from a student satisfaction perspective, are mixed, what is hinted at is the improvement in reflective skills over time. Furthermore, students strongly endorse the mentoring system.

3.4.13 Outreach is proving to be an outstanding success with the students, evidence for which can be derived from the evaluation conducted by NES and our BDS 5 survey:

*The clinical experience this year… is invaluable. Although I am very aware that I still have a long way to go, the improvement I feel I have made in terms of treatment, knowledge, theory and confidence is immeasurable. I can only attribute this to the experience of Outreach.*

*Highlight of the BDS Curriculum; very efficient environment to learn in.*

Analysis of quantitative data demonstrates that students are benefiting from a large volume of clinical experience. We have established a research project to look at VT trainers’ perception of 2004 curriculum graduates and this will hopefully further inform our evaluation of the professional and generic skills imparted by the programme.

3.4.14 The impact of the international perspective and of diverse student experience for the BDS curriculum has been limited for reasons largely beyond our control:

- Our international undergraduate student intake is currently limited by the Scottish Government to three students per year.
- We are obliged to benchmark our provision against the requirements of the UK regulator, the General Dental Council. Having said this, those requirements

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almost certainly reflect internationally accepted standards of practice, both professional and educational.

- We suspended exchange (Socrates-Erasmus) programmes during the development and implementation of the 2004 curriculum due to pressure on staff resources and clinical space. We are considering their re-introduction although a possible barrier is the modular nature of many European undergraduate programmes compared with the longitudinal integrated approach more common in UK Universities. It should be said that many of our students undertake an international elective at the end of BDS4. The elective is popular with students and, anecdotally, the international element is often an important formative experience for them.

- The vast majority of our applicants are school leavers. Nonetheless we do admit graduates (6 out of 92 in 2009) and we are engaged in widening access initiatives (4 entrants from the SWAP access course in 2009).

- In 2009 our youngest entrant was 17 years and 7 months and the oldest was 41 years.

- 66% of 2009 entrants were female; this is a slightly increased percentage when compared with the past five years but certainly in the last four years it has been consistently greater than 50%.

- We have a number of students on the programme registered with the student disability service (3.5.9).

### 3.5 Student Recruitment

**Description of the Department's approach and practices**

3.5.1 Undergraduate intake has remained relatively static at approximately 90 students per annum over the last 6 years. This reflects the number of SFC funded places awarded to the Dental School from the Scottish Government. These targeted numbers must be adhered to closely by the Dental School (+3%) to ensure that we are not penalised for under-recruitment (SFC may claw funds back) or burdened with a significant number of unfunded students.

Postgraduate intake has risen sharply over the last 3 years, following introduction of our new taught postgraduate programmes. However, this year for some of our programmes the overseas intake has fallen below target. Two of our PG programmes have no funded places. Recruitment of postgraduate students from the international market can be challenging and is often dependent on factors outwith our control such as the international financial situation.

3.5.2 The current sources for home undergraduate students are school leavers, graduates (including those with a primary medical qualification) and students who have completed the access programme. With regard to international undergraduate students, the main source area is South East Asia. Students from this area generally receive a fully funded government scholarship, but we are limited by the Scottish Government to a maximum intake of three overseas undergraduates per annum. We consider these sources to be sustainable for the next 10 years. In fact the number of applicants to the UG programme has increased considerably this year from 460 in 2008-9 to 560 in 2009-10. This increase is primarily due to an increase in home applications.
3.5.3 The current sources for postgraduate students are dependent on the course:

**MSc Primary Dental Care** – UK based primary care dentists who wish to further their education with a view to becoming a dentist with a special interest. This source is also sustainable for the next 10 years.

**DClinDent in Orthodontics** – 1 home and 1 overseas student place per annum. The home student is part of an employment package and the overseas interest lies in the middle-east and south East Asia. There is exceptionally high interest and competition for this overseas place, which would suggest that it would be sustainable for the next 10 years.

**For MSc OMFS (Oral and Maxillofacial Surgery), and FRP (Fixed and Removable Prosthodontics)** students, full fees are charged and most are drawn from the international market. The courses do not qualify international candidates for full GDC registration and those wishing this would still be required to sit the Overseas Registration Examination (ORE). In addition these courses do not lead to a qualification which would allow the candidate to be entered onto any of the GDC or GMC specialist lists. The market for these students is very buoyant. There is a great deal of interest from the Middle East and there is also growing interest in South East Asia.

3.5.4 For undergraduate places there is no immediate recruitment plan, since the number of highly suitable applications far exceeds the number of available places. In 2009/2010 the number of applications increased by 100 (from 460 – 560) for the 87 home places. Places are capped both by the SFC target and in practical terms by the number of students we can physically accommodate in our clinical facilities (maximum of 90 students per annum). However, we are not complacent and participate very actively in the University Open Days in June and September, including the option for potential applicants to tour the building and meet with current students. We have no separate honours programme in dentistry. The three international places permitted per annum by the Scottish Government have generally been filled with interest from North America and South East Asia.

For postgraduate places, we do have a more pro-active recruitment plan. Since our postgraduate programmes include major clinical components, our total capacity is restricted by available clinical space. The MSc in Primary Dental Care, which is aimed at home students, has been publicised by adverts in the *British Dental Journal* and by direct contact with Clinical Directors of Primary Care Dental Services in Scotland. This programme is part-time over three years and is now over-subscribed (35 students currently in the programme). The recruitment of overseas postgraduates is more challenging, but we are currently fostering links in South East Asia and the Middle East, where a number of new dental schools have been opened, for which there is a shortage of academic staff. We have developed taught Masters Programmes in Fixed and Removable Prosthodontics and in Oral and Maxillofacial Surgery which include a significant component of Medical Education to recruit students on Government sponsorship to these new programmes.

3.5.5 Our Admissions Officer and Administrator have met with the University Director for Equality and Diversity and all members of staff who interview potential students have attended bespoke and specific training on equality and diversity issues.

3.5.6 Our admissions process for the BDS course is complex and has been developed and continually assessed over recent years. Full details, including contact details of staff members who can offer advice, are available on the Dental School web-site.
Candidates are assessed using four key components – the **person specification, portfolio, interview and UKCAT (3.5.11) score**. Candidates are initially screened against our person specification ([Appendix 7.7](#)). Candidates are then ranked 0-3 according to the qualifications presented on their UCAS form and the predicted grades detailed in their academic reference. Candidates who do not meet our essential requirements are ranked 0 and rejected at this point. Candidates who meet our essential requirements but not our preferred requirements are ranked 1. Candidates who meet our essential and preferred criteria are ranked 2 and candidates who exceed this requirement (such as MBChB holders with fellowships) are ranked 3. Category 2 was created in order to acknowledge those candidates who have achieved top results throughout their schooling, and who have chosen to follow our preferred subjects. Candidates ranked into category 3 with MBChB (Medicine) qualifications and fellowships are generally given direct entry to BDS 2.

Candidates ranked into categories 2 or 3 proceed directly to the interview and portfolio stage. Candidates ranked into category 1 are filtered using their UKCAT score. Candidates are filtered using their percentile and the cut off score is determined yearly to allow us to progress 260 to interview. Those selected to progress are then sent a portfolio document to complete ([Appendix 7.8](#)) which is marked independently by two members of the Admissions Committee, and invited to attend a selection interview with another two members of the Admissions Committee. Both the interview and portfolio assess seven criteria:

- That you provide evidence of an interest in dentistry. That you have an understanding of the career you are choosing and what it means to be in a profession.
- That you are able to be self-critical and self-motivating.
- That you provide evidence that you are able to analyse information and are capable of independent thought. That you have the ability to plan, think on the spot and enjoy problem solving.
- That you have a caring nature, empathy, are trustworthy and respectful of the views of others.
- That you are able to put people at ease and have good interpersonal skills.
- That you are able to provide evidence that you are capable of working in a team and also have the capacity to act as a leader.
- That you provide evidence of manual dexterity, creativity and spatial awareness.

The portfolio and interview assessment have a well established matrix which markers use to determine the evidence against each of the above criteria. Candidates achieve one of four marks for each of the seven criteria, graded as: **No evidence, Needs more, Satisfactory, or Clear attainment**. For the portfolio a numerical grade of 0,1,2 or 3 is assigned for each of the criteria and for the interview a numerical grade of 0,2,4 or 6 is awarded, thereby doubling the weighting of the interview to the portfolio. The maximum achievable score for the process is 126 points. The candidates are ranked numerically, descending from 126, and this ranked list forms the basis on which decisions are made relating to offers of a place on the course.

3.5.7 The School works closely with the **University Recruitment team** which visits schools on our behalf. The Dental School web-site contains contains extensive
information on the admissions process and requirements. Furthermore, a vast amount of time is devoted to personal consultation with schools and prospective students through e-mail and telephone conversations. The School has engaged in four recent overseas visits, two to Malaysia for undergraduate and postgraduate recruitment, and two to Libya linked to postgraduate recruitment.

3.5.8 The Dental School has recently established a pre-dental access programme through SWAPWest. This programme is specifically aimed at mature students who wish to re-train as dentists and do not have the appropriate entry qualifications. The first intake of four students entered BDS in 2009 with a variety of career backgrounds from the civil service to dental nursing. In addition to this we have a number of graduate entrants with relevant degrees who fall into the older age group. The 2009 cohort has an age range from 17 – 41 years with 15 mature students over the age of 21. The Dental School is also keen to foster links with under-represented schools and this year permitted entry to BDS for a student from a GOALS school who narrowly missed her conditions, but whose tariff points met our current requirements.

The intake of undergraduate students from minority ethnic backgrounds is in proportion with the general Scottish population. These students originate from home as well as overseas sources. Many of our postgraduate students are from minority ethnic backgrounds since three of the programmes attract primarily international applications.

3.5.9 Dentistry poses particular challenges in relation to disability due to the largely practical and physically demanding nature of the clinical services provided and the need to ensure patient safety. It would seem that physically disabled students understand this and consequently we receive few applications from this group. However, many students enter the programme with learning disabilities, most notably dyslexia, and provisions are made to support this fully. Two members of our recent intake of students are registered with the Disability Service, though we are aware that a total of five students entered the course with a learning disability.

**Evaluative Statement or Commentary**

3.5.10 The Dental School is aware that more females than males enter the programme, despite roughly equal numbers of applicants of each gender. However, our admissions process has been refined over several years and we consider it to be transparent, robust, and non-discriminatory (3.5.6). We believe that the reason for this gender imbalance lies in the maturity of the female school leavers compared with the males and plan to discuss this with the Schools Liaison Officer to see whether any further advice can be incorporated into the information we offer schools at present.

3.5.11 The UK Clinical Aptitude Test (UKCAT) is used in the selection process by a consortium of UK University Medical and Dental Schools, which includes Glasgow. The test is designed to help universities make more informed choices from amongst the many highly-qualified applicants who apply for their medical and dental degree programmes. It ensures that the candidates selected have the most appropriate mental abilities, attitudes and professional behaviour required for new doctors and dentists to be successful in their clinical careers. The UKCAT does not contain any curriculum or science content and therefore does not lend itself to preparation. It focuses on exploring the cognitive powers of candidates and other attributes considered to be valuable for health care professionals. The test is run by the UKCAT Consortium in partnership with Pearson VUE, part of Pearson plc and is delivered on computers worldwide through Pearson VUE’s high street centres.
3.5.12 We have encountered significant operational difficulties with the Faculty of Medicine Graduate School in relation to postgraduate admissions to dental programmes. We believe this to have been a factor in our under-recruitment of overseas students for the 2009/2010 academic session. These difficulties were raised with the previous Head of the Graduate School and with the Graduate School Administrator. Action is being taken to resolve the issues, but for 2009/2010 the Dental School would prefer to manage its own postgraduate admissions process.

3.5.13 Interactions with overseas universities and governments can be challenging. Despite great efforts (including two visits to Libya) to set up the two MSc programmes in Fixed & Removable Prosthodontics with Dental Education, and Oral & Maxillofacial Surgery with Dental Education for a signed agreement between the Faculty of Medicine and the Al-Fateh Medical University in Tripoli, no students appeared in September 2009 to take up the available places.

3.6 Student Progression, Retention and Support

Description of the Department’s approach and practices

3.6.1 The Dental School recognises the importance of providing support through the admissions process to allow a smooth transition of students into University study. Contact numbers and e-mail addresses of the admissions team are available to applicants on the web-site, providing an accessible and approachable point of contact for accurate, up-to-date advice.

Following the admissions process, pre-registration students receive introductory packs designed to give clear and practical advice for registering and starting the programme. The pack contains the following:

- Details of required Occupational Health Clearance.
- New student registration advice.
- Dental School Induction Day information.
- Course information including reading lists.
- Practical advice on obtaining clinical dress.
- Fitness to Practise information.
- Information for students with disabilities.
- University welcome activities.
- Timetable for the first week.

During the period between accepting an offer and starting the programme both undergraduate and postgraduate students receive personalised attention through phone calls, e-mails and face to face contact as necessary.

3.6.2 During the first week of BDS 1 a comprehensive Induction Programme takes place, to support integration of the students into the learning community of the School. This consists of a series of talks from the Head of School, Director of Dental Education, BDS1 Co-ordinator, SRC Representative, and staff from the Library, Student Support
and Registry. Staff from the Teaching and Learning service provide lectures and advice on study skills and the role of Effective Learning Advisors, and students are made aware of the full range of support mechanisms available to them. The students also receive training on use of the virtual learning environment Moodle. Social activities include sporting events and pairing the BDS 1 students with a BDS 5 student mentor at a “Big Brother-Big Sister” evening. The first weeks of the course are designed as an extended introduction to the programme, with introductory sessions for a number of the specific subject areas. Because of the small number of overseas undergraduate students admitted (maximum of 3 per year), the School does not have a separate international induction programme. Support is provided on an individual basis by the Administrative Officer, including practical assistance with issues such as visa applications and accommodation queries.

Student opinion and experiences of induction are captured and evaluated at Mentor meetings, Staff Student Liaison meetings and in a formal BDS 1 student feedback questionnaire. The results of the questionnaire are laid out via simple descriptive statistics with the entire range of student comments appended. This is made available to all staff to allow for reflection and improvement on the Induction Programme.

“I felt the introductory week was incredibly useful in getting to know the dental school, the course and what was expected of us. I felt that I learned a lot about the course during the first week”.

“I felt this week was beneficial for settling in. Nothing was rushed and we had time to adjust to starting university, rather than being thrown into a different life like the other courses. It made the change less scary!”.

3.6.3 Postgraduate induction occurs twice: for the MSc Primary Dental Care part-time students in the first week in September; and for the overseas taught postgraduates at the end of September / early October. The needs of the two groups are distinct and their induction sessions are tailored appropriately (3.6.16).

3.6.4 The undergraduate mentoring programme is a core element of the BDS course and is instrumental in the integration of students into the learning community of the School. There is a strong emphasis on reflection, personal development and taking responsibility for one’s own learning experience, but this is nurtured within a supervised and supportive environment. Each student is allotted a mentor with whom he/she remains for the entire five year programme. Staff members are allocated mentees every other year and are responsible for up to 6 students in any one year. Staff involved in mentorship receive training to allow them, in turn, to motivate and support students. Formal mentor meetings commence in Week 5 of BDS 1 and are held once per term thereafter. The structure of the meetings is described in 3.4.3.

3.6.5 Each year of the BDS curriculum has a Staff/Student Liaison Committee chaired by the Year Coordinator. There is, in addition, an over-arching BDS Staff/Student Liaison Committee at School level, which provides an opportunity for formal staff/student interaction covering the five years of the BDS programme. It is chaired alternately by the Student President and the Honorary Staff President of the Glasgow Dental Student Society respectively, and reports to Medical Faculty via the Dental Education Committee. This committee also provides a forum for discussion of those issues that have School-wide implications or where resolution at a local (Course) level has failed. It provides an opportunity for students to comment
on major course proposals and reports from external agencies. Other issues, such as those relating to resources, may be referred to the Dental School Executive Committee or the Head of School for resolution.

3.6.6 The five Student Advisors perform a different function to those in many other departments. Since the prescribed nature of the BDS programme results in little requirement for student advice on individual choices of course, the function of the Student Advisers is largely pastoral. They provide confidential support for students facing a wide variety of personal problems, including those related to issues such as health and financial difficulties. The role and identity of the Advisors is widely publicised to the students, who may contact the Advisors directly, or be directed to an Advisor by a concerned Mentor or other staff member. The Advisors act as an important conduit for onward referral to other relevant support services available within the University such as the Student Counselling Service.

3.6.7 For many elements of the BDS programme there is rigorous attendance monitoring. Any student whose attendance is giving cause for concern is interviewed, initially by the Course Coordinator and then, if deemed necessary, by the Director of Dental Education. This process allows problems to be identified and corrected promptly, thereby reducing the risk of a student failing to meet progress requirements.

3.6.8 The BDS course employs a significant amount of continuous assessment and competency assessment, which can alert staff to students who are encountering difficulties. Such information is fed to the appropriate Course Co-ordinator who will meet with the student and arrange for appropriate support and follow-up. If necessary, meetings will be arranged with the Director of Dental Education.

3.6.9 The Student Support Committee exists to identify students having difficulty and to facilitate support and assistance as required. It is chaired by the Director of Dental Education and includes all of the Course Co-ordinators and Student Advisors. This committee meets approximately three to four times each session. Prior to each meeting all teaching staff are contacted by the Course Coordinators and asked for notification of any students giving cause for concern. The issues surrounding each student identified are discussed at the meeting and further investigation carried out if deemed necessary. Discussions are completely confidential. Appropriate mechanisms for managing the specific problems are then established. The BDS Programme is a very time demanding course and the occasional student may find it difficult to meet the requirements as a result of ill health or short-term external commitments. In the first instance extra academic and personal support can be arranged to allow the student to catch up. In rare, extreme cases arrangements can be made to allow the student to take time out from their current year of study and to repeat the year, or to take an entire year out before returning to complete the course.

3.6.10 The formal process of referral to Progress Committee is invoked when an undergraduate student has breached progress regulations and consequently has not satisfied the criteria to advance to the next level. The Committee explores the causes of the problems and ensures that any necessary support mechanisms had been put in place. The Committee then decides whether the regulations can be waived to allow the student to progress or to repeat a course, and will define any further support required to allow the student adequate opportunity to achieve success. Only when all options and support mechanisms have been exhausted will a student be excluded from the course. This is a very rare occurrence as the emphasis in the School is to detect problems early through the mechanisms discussed above and to put support in place, whether academic or personal/social.
3.6.11 A strong sense of community is encouraged, and a variety of mechanisms encourage students to **integrate with peers and the wider academic life of the School.** Sporting and social events occur throughout the BDS programme; these include Field Days, an annual ball, the ‘Halfway Ball’ and the traditional charity ‘Christmas Panto’, all of which cultivate a sense of community within the School. Clinical and academic activities are frequently carried out in pairs or in small groups of 5-6 students within years, encouraging integration and development of a team spirit. The team approach is further enhanced in clinical activities where senior and junior students work together, and there is also great emphasis on the role of the dental team, which includes dental nurses and hygienist / therapists. All clinical teaching involves staff and students working closely together, further enhancing integration, and this is built upon in the mentoring sessions. Each year has a small group of **student representatives** who work with their peers to gauge student opinion and feed ideas for improved integration into the Staff/Student Liaison Committees.

3.6.12 Various committees within the Dental School, including the Dental Education Committee and the Postgraduate Studies Management Committee, have **student representation.** This gives the students a clear sense of their importance within the academic life of the School and of our determination to deliver a course that is student-centred.

3.6.13 Students who have to **re-sit examinations** are invited to meet with the Director of Dental Education to discuss the reasons for their performance. They are encouraged to meet with the Effective Learning Advisor from the University and receive additional support from Course Co-ordinators and individual members of the Dental School teaching staff. Extra teaching time, supplementary seminars and one to one advice are provided by a range of teaching staff if required.

3.6.14 Changes in student diversity profile have been addressed in a number of ways and the School makes every effort to provide a teaching environment that is free from discrimination. The Dental School acknowledges that the entrance requirements can be difficult to meet for more mature students who have followed different career pathways previously. This has led to the development of the SWAP entry system referred to above (3.5.8). It is also now policy of the Admissions Committee wherever possible to interview with mixed gender panels, to reduce any potential gender bias. Part-time study is not available for undergraduates. However it is available for the MSc (Dent Sci) in Primary Dental Care which allows dentists to continue in dental practice with their own patient base while at the same time undertaking a higher degree.

In recent years the programme has experienced a greater age range of students and there is no age limit policy in place. Due to the nature of this clinical course, flexible hours and part-time study cannot be accommodated. However, wherever possible we are flexible with timetable swaps and students are permitted to exchange outreach placements with peers when it conflicts with family/carer responsibilities.

Through confidential questionnaires we attempt to identify students with disabilities at an early stage. They are treated sensitively and directed to the Student Disability Service should they so wish. They will also receive support throughout the course from one of the Advisors and for clinical work the disability record is disclosed via the Departmental Disability Coordinator to the appropriate staff on a ‘need to know’ basis only.

With regard to language ability, all students for undergraduate and postgraduate studies must obtain a minimum IELTS score of 6.5 prior to admittance. If students
require further support with their language, the Dental School makes arrangements with the English Language Centre at the University of Glasgow. To support ethnic and cultural differences within the student body the Director of Dental Education permits two additional days of leave per annum to attend religious festivals or ceremonies over and above the allocated Dental School holidays. The Dental School provides accommodation in two seminar rooms for those students requiring prayer rooms as far as the space constraints of the building and other operational requirements allow.

3.6.15 Opportunities for work experience, placements, study abroad and other off-site experiences are available, but only within the professional regulatory framework in which we operate. Dental students cannot work as independent dentists until they have completed their degree and are registered with the General Dental Council, so there are no work placements within the programme. However in BDS 5, 50% of the clinical teaching is delivered in new dental outreach centres (3.4.6).

Students are encouraged and well supported to carry out dental elective projects abroad. A Dental Electives Advisor and Dental Electives Committee oversee the student elective projects and provide support and advice to students and staff supervising elective students. Students receive general guidance about funding sources, protocol submission, ethical approval requirements and health issues. Students choose elective supervisors from among the staff and they too provide support and offer guidance with the preparation and write-up of dental electives. Information about elective travel is provided in course documentation.

3.6.16 Postgraduate student support is provided through close monitoring by an Advisor, Research Supervisor, and Pastoral Mentor. Students are encouraged to share concerns and problems at an early stage to allow the necessary support mechanisms to be put in place. Attendance monitoring and continuous assessment also allows staff to identify students who might require extra support.

All postgraduate taught students are allocated an advisor, who is a staff member who acts as an academic mentor. The Programme Director or the Postgraduate Management Committee usually appoints the advisor. The advisor supports both the student and research supervisor and assists in monitoring the student's general progress. The advisor participates in both pre- and post- meeting discussions with the supervisor if there are issues arising that need attention, and is available for these sorts of discussions informally, outside the framework of the formal meetings. In particular, the advisor supports the supervisor in providing critical appraisal, where appropriate, of the student’s written skills, understanding of the project and performance in the laboratory. The appraisal is recorded on the meeting record forms. The advisor is responsible for ensuring that deadlines are met for submission of the Progress Reports and the dissertation. The role of the advisor is not in any way meant to disturb the special relationship between student, supervisor, and Director of the Programme. However, if a student feels the need to discuss matters, whether academic or otherwise, with another person, the advisor will be available.

Each postgraduate taught student is also allocated a research supervisor within one month of commencement. The responsibilities of the supervisor include:

- Giving guidance about the nature of research and the standard expected.
- The planning of the research programme, literature and sources.
The relationship between the student and his/her supervisor is of central importance and is governed by the University's Academic Standards Committee Code of Practice. They have a joint responsibility to ensure that the dissertation is completed within the prescribed period of the course. Supervisors and students establish at their initial meeting clear and explicit expectations of each other in order to minimise the risks and problems of misunderstanding, personality clashes, inadequate supervision and unsatisfactory work. At this meeting, the proposed research topic is discussed, and the student and supervisor should draw up a timetable of initial aims to cover the first few months.

Finally, each student is allocated a pastoral mentor who is available to help with any problems that are not directly related to academic studies, for example accommodation problems.

3.6.17 An e-portfolio specifically designed for Glasgow BDS students has been introduced in academic session 2009/2010 for BDS 1 and 2 and will be used for all subsequent years of entrants to the Dental School. The e-portfolio allows students to maintain a personal record of their academic and clinical progress in a way that encourages continuing professional development and leads directly into reflective practice following graduation. The e-portfolio is used as a vehicle for submission of assignments though all students have a confidential domain to which staff have no access. The use of this system is in its early stages and will be evaluated via student feedback. The e-portfolio will continue to develop with input from both staff and students.

3.6.18 Dental students require very specialised careers advice which is not provided by the main University Careers Service. Many of the staff within the School give general careers information and will arrange meetings with individual students to give guidance at their request. Much of the required advice is provided within the Dental School in conjunction with the relevant professional agencies. The most important interaction is with NES and other postgraduate deaneries who manage the process for matching applicants to their Vocational Training (VT) or General Professional Training (GPT) placements immediately upon qualifying. Students are allowed time to attend such events during BDS 5 and to attend interviews by VT/GPT trainers as part of the selection process. The Director of Dental Education and the BDS 5 Course Coordinator are both members of the NES Scottish Vocational Training Committee, which maintains a link between undergraduate training and postgraduate pathways and ensures that the School has up-to-date information on the application and interview processes each year. In addition, careers evenings are arranged within the Dental School, often sponsored by professional indemnity organisations, at which speakers from different arms of the dental profession deliver presentations. Priority is given to BDS 5 students but students from other years can also attend.

In 2008/2009, Glasgow dental students, with the support of academic staff, organised a Scottish Dental Careers Fair in the Wolfson Medical School Building. This was an entirely student-driven initiative and was a great success. It is to be repeated in the 2009/2010 session but on a larger scale to include attendees from some of the English dental schools.

Evaluative Statement or Commentary

3.6.19 The BDS programme is a specialised course which has a rigorous and robust admissions process. This process admits entrants who have knowledge of the requirements and nature of the programme and who are often very driven and
focused on their future as a Dentist. This along with an extended induction period and a well structured mentorship programme means there are currently no significant issues with student retention and progression between BDS 1 and BDS 2 (100% progression from the 2008/2009 BDS 1 cohort to BDS 2 in 2009/2010). Clearly, we will continue to monitor this with an ongoing focus to make the transition from School to University as seamless as possible, and to provide a supportive and positive learning environment in which the students are encouraged to realise their potential.

3.6.20 Our taught PG programme opened in September 2007. Retention of overseas PG (T)’s to date has been 100%. The retention for the part-time MSc in Primary Dental Care for UK and Ireland Dental Practitioners has been 83%. The loss of 6 of these busy practitioners reflects the difficulty of studying for an MSc degree whilst maintaining and running a business.

3.6.21 The outreach teaching facilities provide outstanding learning environments, that mimic closely the working environment in a primary care dental practice. It is, in effect, a stepping stone from the Dental School to the normal working environment for a qualified dentist. Students also gain off-site experience in other hospital units (e.g. maxillofacial surgery) as part of the clinical outreach programme.

3.6.22 Selected candidates may be admitted after BDS 3 to study for a one-year intercalated BSc (Dent Sci) degree and to re-enter the dental course the following year. There are identified Co-ordinators for each of the eight subject areas available, based in the respective departments (e.g. anatomy). However, the students retain contact with their Mentors at the Dental School. Often the students choose to undertake their project work within the Dental School, under the co-supervision of a Dental School staff member.

3.7 **The Quality of Learning Opportunities**

*Description of the Department’s approach and practices*

3.7.1 As described in 3.2, we believe that, in terms of content, teaching is well aligned with the Intended Learning Outcomes. This alignment is hopefully transparent and clear to the students.

3.7.2 Much of the teaching is didactic and practical in nature and this relates to both the volume of material covered by the curriculum and the predominance of clinical skills content. However, as previously discussed (3.4), there are examples of Enquiry Based Learning and other innovations in teaching. These are illustrated by a number of case studies (Appendix 7.9). Of relevance here are the School’s efforts in the area of e-learning (3.4.11). We have made considerable use of Moodle and all lecture material is placed on Moodle in advance of lectures. This allows students to print handouts which they can take to the lecture, and students with disabilities such as dyslexia find this particularly helpful. In addition lesson plans, tutorial material, podcasts, video presentations, reading lists, and similar documents, are placed on Moodle, as is course and programme information. Students currently submit formative assignments via Moodle, although this function will eventually be transferred to the e-portfolio.

3.7.3 The Dental School subscribes to the view that learning in a research environment enriches the experience of students. Many of those involved in delivering teaching are also active researchers, particularly in the fields of our focused
research themes such as Community Oral Health, Infection and Immunity, Three Dimensional Imaging, and Alcohol Abuse & Violence Reduction. There is a strand of teaching on evidence-based dentistry that runs through the five year programme and includes small group workshops on critical appraisal of scientific papers, which is underpinned by the teaching of relevant statistics. The knowledge and skills involved are written into our ILOs and are potentially given expression in the elective project at the end of BDS 4. There are significant overlaps here with the Enquiry Based Learning alluded to above.

3.7.4 Educational scholarship is actively promoted. There are now 14 academic staff members with University Teacher, Clinical University Teacher and Senior Clinical University Teacher contracts. Many of our staff have engaged with the Learning and Teaching Centre and continue to undertake educational research projects funded by the Learning & Teaching Development Fund. Staff have been attending the series of continuous development seminars being run by the Learning and Teaching Centre on Student Learning Enhancement Themes. Staff have also presented at the recent Scholarship of Teaching and Learning (SoTL) seminar. Two projects funded by the LTDF 2009-10 on Syndicated Learning and Peer-assisted Learning have been presented to Dental School staff at a research seminar hosted by the Dental Education Research Group. The Syndicated Learning study continues the development of small group self regulated learning previously developed in connection with the Learning and Teaching Centre (http://www.pestlhe.org.uk/index.php/pestlhe/article/view/14/92). As a result of the success of the funded pilot study of peer-assisted learning, inclusion of a session in which BDS 5 students instruct BDS 1 students in a simple clinical task is being considered for introduction into the curriculum.

A Dental Education Research Group was established in November 2008 with the following mission: To promote scholarship, in all its forms, and to expand the evidence base for teaching, learning and assessment in Dentistry. The formal establishment of this Group was stimulated by recognition that there was already significant evidence of scholarly activity within the Dental School in the form of grants and publications over the past 5-6 years. These represent the laudable efforts of individual staff acting in a largely uncoordinated way. The challenge, which is now being actively addressed, is to develop this into a properly focussed research effort.

Grants and publications since the last DPTLA review are shown in the boxes below:

<table>
<thead>
<tr>
<th>Educational Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTDF</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>McKerlie R., Cameron D., Matthew R. A pilot study of microteaching and a reflective journal for student learning in dental technology. Award: £3,600</td>
</tr>
<tr>
<td>2004-5</td>
</tr>
<tr>
<td>Leitch J. Management of medical emergencies for the dental team: development of a multi-media web-based resource for undergraduate dental student training. Award: £4,000</td>
</tr>
<tr>
<td>2005-6</td>
</tr>
<tr>
<td>Cameron D., McKerlie R., Matthew R. Teaching Dental Technology to Dental Students: Relevance and Professional Competence. Award: £4,000</td>
</tr>
<tr>
<td>Cameron D., McKerlie R., Matthew R. An online resource to support a microteaching method of teaching. Award: £2,500</td>
</tr>
</tbody>
</table>
Crothers A. The use of an imaging system to develop teaching, learning & formative assessment of clinical procedures in operative dentistry. Award: £5,840

Sharkey P & Crothers A. Development of Operative Dentistry Interactive DVD. Award: £5,750

2006-7

Binnie V, Crothers A & Wilson S. Production of Video/DVD based material to promote Dental Students Communication Skills within clinical settings. Award: £5,830

2009-10

Cameron D, Binnie V, Crothers A. Sherriff A. Peer Assisted Learning – an innovative approach for developing clinical and manual skills within Dentistry. Award: £2,390

McKerlie R, Cameron D, Sherriff A, Bovill C. An investigation of the utility of a form of syndicate learning within a pre-clinical course of the undergraduate dental curriculum. Award: £1,600

Chancellors Fund

2008-9

Morrow L, MacKenzie J & McKerlie R. On-line resource to support GU staff engaging in the Scholarship of Learning & Teaching. Award: £4,938

McKerlie R, Crighton A. Use of a web-based self-assessment learning resource to improve student confidence in medical emergency management skills learning. Award: £9,000 with £5,000 top-up from NHS Education for Scotland (NES)

NES

Anderson P, Bagg J, Rea P, McKerrow W. Work programme for 2D and 3D digital visualisation supporting interactive educational content. Award: £1.5m from August 2009 for 3 years

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Educational publications

In press


2009


2008


2007


2006


3.7.5 Dissemination of good practice in Learning and Teaching amongst academic staff, including part-time staff, has been addressed by various means including publication of teaching synopses, training provided by Sections and school-wide training events such as the annual ‘Education Day’. These latter events have focused significantly on assessment, particularly question writing, during the years of development of the 2004 BDS Curriculum. However, at the most recent Education Day in November 2009 the opportunity was taken to engage staff in the DPTLA process and, through a process of group work and plenary sessions, staff views on such issues as Quality Enhancement, Feedback and Research-Informed Teaching, were explored.

Dissemination of good practice for outreach teachers is achieved by:

- Provision of induction training on appointment.
- Provision of clinical teaching policy and procedure documents.
- Frequent involvement in delivery of teaching within the Dental School.
- Attendance at in-service training in relevant clinical academic units.
- Attendance at annual policy and clinical updates.
- Rotational attendance at a 6-day course on Teaching, Learning and Assessment developed in collaboration with NES. In addition four outreach teachers have been funded, again through NES, to complete a postgraduate Certificate in Medical Education through the University of Dundee.

3.7.6 All newly appointed lecturers undertake the New Teacher Lecturer Programme delivered through the Teaching and Learning centre. This provides a very firm foundation for their future careers as teaching staff. The junior clinical academics on clinical training programmes are each supported through the standard procedures operated by the Clinical Academic Training & Advisory Committee (CATAC) of the Faculty of Medicine (3.8.9).

3.7.7 The document Quality Assurance and Quality Enhancement in the BDS Programme (Appendix 7.2), written for students, describes the various means by which we evaluate our teaching. It sets out how we obtain feedback from staff and students, how we use that feedback, and how we make the whole process as transparent as possible.

3.7.8 Student feedback on teaching and support for learning is generally very positive. This is reflected in the National Student Survey, and the relevant sections of the 2009 survey are abstracted here. The NSS response rate in 2009 was 91% and in relation
to all the questions in these sections of the survey the Dental School exceeded both the institutional benchmark and the Faculty KPI.

<table>
<thead>
<tr>
<th>Category</th>
<th>No</th>
<th>Statement</th>
<th>Dental School % agree 4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching on my course</td>
<td>1</td>
<td>Staff are good at explaining things</td>
<td>99%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Staff have made the subject interesting</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Staff are enthusiastic about what they are teaching</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>The course is intellectually stimulating</td>
<td>99%</td>
</tr>
<tr>
<td>Academic support</td>
<td>10</td>
<td>I have received sufficient advice and support with my studies</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>I have been able to contact staff when I needed to</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Good advice was available when I needed to to make study choices</td>
<td>89%</td>
</tr>
<tr>
<td>Learning resources</td>
<td>16</td>
<td>The library resources and services are good enough for my needs</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>I have been able to access general IT resources when I needed to</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>I have been able to access specialised equipment, facilities or room when I needed to</td>
<td>90%</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>22</td>
<td>Overall, I am satisfied with the quality of the course</td>
<td>97%</td>
</tr>
</tbody>
</table>

This high level of satisfaction is generally reflected in BDS 1-4 also. We have incorporated NSS questions into surveys in earlier years so that we are able to make direct comparisons, familiarise students with the questions and spot developing trends.

**Evaluative Statement or Commentary**

3.7.9 We are very confident, for reasons already expressed, that the content of the BDS curriculum is well aligned with ILOs and assessment. All the evidence points to the effectiveness of our teaching and support for learning:

- Positive student feedback.
- Highly favourable external examiner reports.
• High rates of student progression and completion
• 100% graduate employment

3.7.10 The range of learning and teaching methods employed is wide and appropriate to the acquisition of both subject specific knowledge and skills, and ‘graduate attributes’. There are credible examples of Enquiry–Based Learning; indeed the skills needed for such an approach are fostered through a strand of teaching and our emphasis on reflection. Furthermore, the case studies demonstrate that academic staff are actively engaged in thinking about, and acting upon, new approaches to learning and teaching.

3.7.11 We are not complacent about the need to enhance continually the quality of learning opportunities available to students. We have discussed previously in this report the desire to develop yet further student-centred approaches to learning. This applies to e-learning in particular, where we have been fortunate to secure significant funding from NES for innovation of national and international significance. There is no doubt that Moodle, as currently employed, is a largely teacher-centred resource. We believe that we have used Moodle to the full extent that our resources will allow, and perhaps beyond. Developing more interactive learning in Moodle will certainly require further resource input and this is difficult to identify at present.

3.7.12 Ensuring that staff are adequately supported and developed in relation to their role as educators is not without difficulty. This is due to our reliance on part-time clinical teachers and NHS employees in some areas. By combining sessional appointments to create half or full time jobs we have, over the past four or five years, at least reduced the headcount of such staff, which makes provision of support somewhat easier. We have also improved both the quality and frequency of training events offered. This has been accomplished in cooperation with NHS Management colleagues. Of course, both clinical academic and clinical NHS staff are obliged to engage in CPD for purposes of revalidation, which ensures that their subject-specific knowledge and skills are maintained. The Teaching and Learning course developed for Outreach teachers in cooperation with NES has proved successful and, funding permitting, we would like to be able to offer this to in-house NHS staff also. The NLTP has ensured that academic staff appointed within the past several years possess a high level of educational knowledge and skill. The case studies, LTDF grants, and publications provide evidence of scholarship and good practice. The activities of the Dental Education Research Group, for instance seminars and journal clubs, will hopefully foster the development of a community of practice amongst teachers within the School.

3.7.13 In January 2009 a meeting was held between Course Coordinators and Student Representatives, facilitated by the Director of Dental Education, to review the Dental School’s compliance with the Code of Practice on Obtaining and Responding to Student Feedback. The outcome of that meeting suggested that the School was very largely compliant with this Code of Practice, and also with that on Student Representation and the guidance on Staff-Student Liaison Committees. We have worked to encourage students to put themselves forward for representative positions and ensure they complete the training. We have also emphasised the need for students to take ownership of the process of representation and we have facilitated this by, for example, providing a Moodle area for Student Representatives. This allows two-way communication between representatives and the student body and the representatives have been trained to moderate this forum. We have been proactive in ensuring that minutes of the Dental Education Committee and Course and Programme level Staff-Student Liaison Committees are published and easily
available for students to read. This has been the case for a number of years and it was therefore very disappointing to see that only 62% of students completing the 2009 NSS responded positively to the question ‘It is clear to me how students’ comments on the course have been acted upon’. The meeting referred to above identified concrete examples of change that had resulted from student feedback and the contrasting NSS response suggests that many students do not engage with the process. We are hopeful that the Moodle forum will improve this situation and are looking at other ways to raise awareness.

3.8 Resources for Learning and Teaching

Staffing

Description of the Department’s approach and practices

3.8.1 The BDS programme is an extremely time-intensive course, involving a very high proportion of ‘hands-on’ clinical training for students, with the attendant requirement for a high staff-student ratio. Furthermore, staff possessing a wide range of academic and clinical skills are required to deliver the undergraduate and postgraduate dental curricula. One of the main objectives for the School since the last DPTLA review has been to develop a staffing profile that is both quantitatively and qualitatively appropriate to achieve our academic goals. In 2005, the Dental School Executive developed a five year Business Plan with a supporting Staffing Strategy. This ensured that our recruitment of staff mapped directly onto our teaching and research objectives. All of the posts identified had been recruited by 2009 and a further staffing strategy has been developed for 2009-2012.

3.8.2 The organisational aspects of delivering the complex BDS course are challenging and were particularly difficult during the introduction of the 2004 curriculum, because of the concurrent running of two very different curricula. In addition to planning the staffing strategy for academic and clinical staff, we have worked hard to develop an administrative and secretarial structure that supports our academic ambitions. During the development of the 2004 curriculum we were supported by a BDS Curriculum Facilitator whose post came to an end in September 2009. Each Year of the BDS curriculum now has a dedicated Course Secretary who manages all of the administrative processes for that Year and works with the academic Course Coordinator to ensure that each programme runs smoothly. Each Section within the School also has dedicated secretarial support to manage research and other related activities. Each secretary has a defined additional School-wide role, which is viewed as an important element of career development. Our School Administrator is supported by an Administrative Officer who oversees both undergraduate and postgraduate admissions, as well as providing support for many other aspects of the undergraduate programme. We have been fortunate in gaining funding from NES for an Outreach Teaching Administrator, whose role has now been expanded to cover other operational issues at the University / NHS interface, which are often very challenging.

3.8.3 The 51.8 FTEs of academic staff at the Dental School have the capability to deliver virtually all of the teaching required. In the previous curriculum, there was a significant input from staff in other Divisions of Medical Faculty and FBLS, but this has diminished in the 2004 curriculum. This is largely because the GDC document ‘The First Five Years’ has specified that biomedical and medical teaching should be delivered in a context that is closely relevant to the practice of dentistry. As a result, the volume of material delivered in subjects such as pure biochemistry has diminished and much of the relevant science is taught in a clinically related context,
with a larger proportion of the teaching in the 2004 curriculum being delivered by Dental School staff. However, there is still involvement of non-dental colleagues from pathology, anatomy and biochemistry and significant involvement of external staff in the delivery of teaching in communication skills.

3.8.4 As mentioned previously a substantial proportion of the funding to support dental education is derived from the NHS. A significant source of funding for new posts at the Dental School since 2000 has been from the annual uplifts on the ACT (D) funding stream. These uplifts have been provided by the Scottish Government to NES, which in turn has passed the additional funding, after adjustments for pay and price inflation, to NHS GGC. Annual joint working between the Dental School and NHS GGC to develop business plans for utilisation of the additional funding has resulted in a significant number of appointments that have had a positive impact on our delivery of the undergraduate curriculum:

- Teaching Consultant in Oral Medicine – lead for Clinical Medical Sciences teaching.
- Teaching Consultant in Restorative Dentistry – Course Co-ordinator for BDS 4.
- Teaching Consultant in Paediatric Dentistry.
- Sterilisation Test Engineer - involved in teaching of instrument decontamination.
- Dental Team Tutor.
- Resuscitation Training Officer.
- Infection Control Trainer.
- Clinical Lecturer in Oral Surgery.
- Part-funding of a Senior Lecturer / Honorary Consultant in Oral Surgery.

In addition, NES reviewed the allocation of ACT (M) funding in 2005 and identified ACT M(D) funding for both NHS GGC and NHS Tayside to support the teaching of medical subjects to dental students in Glasgow and Dundee Dental Schools respectively. Whilst we were unable to extract from NHS GGC the full level of finance identified by NES in their allocation model, this funding stream has supported the following posts:

- BDS Year 4 Secretary / Clinical Medical Sciences Secretary.
- General Medical Tutor (0.2 fte).
- Clinical Lecturer in Special Care Dentistry.
- Funding for an SLA with NHS pathologists to support delivery of the teaching of general pathology to dental students.
- Uplift of salary to consultant level for a Senior Lecturer in Special Care Dentistry.

3.8.5 A significant amount of the clinical teaching is delivered by NHS staff, who are employed on a wide variety of types of contract. These vary from General Dental Practitioners who attend one session per week, to NHS consultants who provide a major input to teaching. Whilst this resource is clearly very valuable, its
administration can prove difficult since the University has no direct line management role. Great efforts are made to work closely with the NHS and there is University representation on the relevant NHS committees. However, intermittently there can be difficulties in providing sufficient clinical staff to support clinical teaching of undergraduate students. Despite these difficulties, it would be wholly impossible to deliver the course without the clinical support of NHS colleagues.

3.8.6 The introduction of an expanded **dental outreach teaching programme** has provided a significant staffing opportunity, again funded by the NHS. NES supports the full-time salaries of a Senior Clinical University Teacher and an Administrator at Glasgow Dental School to oversee the outreach programme. Similarly, in each of the new outreach centres (1.2) NES supports the revenue costs of teaching. This has permitted the appointment of 10.4 FTE’s of Senior Salaried Dental Practitioners within the contiguous health boards, who deliver the clinical teaching to our students in outreach under the academic control of the Dental School. The governance and quality assurance procedures associated with this teaching are described in Section 3.7.5.

3.8.7 As a result of the national shortage of clinical academics we have a policy of ‘growing our own’, though this is clearly a long-term strategy. One of the mechanisms that is extremely valuable is the availability of funding from NES for **Clinical Lecturerships** with a National Training Number. At any one time NES will fund a maximum of three such posts. The Dental School has an excellent relationship with the Postgraduate Dental Dean and the Associate Dean for Postgraduate Dental Education, with whom we plan strategically to ensure that the appointments to these positions fit closely with our School staffing strategy. This also allows us to identify funding streams into the future available to the Dental School that can support senior academic posts in the key areas in which we have trainees close to completion. Recent successes of recruitment of our own trainees have included the following:

- Senior Lecturer / Honorary Consultant in Oral Surgery (x2)
- Clinical University Teacher / Honorary Specialty Dentist in Oral Surgery
- Senior Lecturer / Honorary Consultant in Restorative Dentistry
- Senior Lecturer / Honorary Consultant in Dental Public Health
- Senior Lecturer / Honorary Consultant in Oral & Maxillofacial Pathology

3.8.8 In light of the difficulties in recruiting senior academics to posts in Restorative Dentistry, we have recently developed a novel type of post, termed a **Clinical Academic Fellow**. These are aimed at relatively junior dentists who have interest in a career in academic dentistry. During these four-year posts, the incumbents complete a PhD linked to the Dental School research strategy, undertake the NTLP programme at the Learning and Teaching Centre, and deliver three sessions per week of clinical teaching. Upon successful completion of the four years, such individuals would be ideally placed to apply for Clinical Lectureships with National Training Numbers to permit higher clinical training. Subsequently they would then be eligible to apply for consultant level senior academic posts. We have funded two such posts from our core budget, but when this model of training was described to NES, they agreed to fund a further two. All four have commenced their contracts in November 2009.
3.8.9 As a result of the employment of clinical staff by the Dental School, staff development and appraisal is managed through a variety of schemes, dependent on contractual types. Staff who are non-clinical all participate in the standard University Performance and Development Review (P&DR) process.

For clinical staff there are three routes:

• Clinical academics with honorary NHS consultant contracts participate in the NHS Consultant Appraisal process, but conducted jointly with a University and NHS appraiser, according to the Follett Report. Honorary consultants also participate in Job Planning, for which the normal formula is 5 NHS sessions per week, of which 3.5 must incorporate Direct Clinical Care (DCC). It is possible to include clinical teaching as DCC sessions, but in order to maintain clinical competence as well as satisfy Health Board requirements for clinical service, all consultants maintain an independent case-load. Participation in Consultant Appraisal and Job Planning is a contractual requirement.

• Clinical Lecturers who hold Honorary Specialist Registrar contracts and are on clinical training programmes participate in the Record of in Training Assessment (RITA) process that is managed by the postgraduate deanery (NES). In addition, each Clinical Lecturer has an Academic Mentor appointed by the Medical Faculty Graduate School and is required to submit an Annual Academic Progress Report for consideration by the Clinical Academic Training Advisory Committee (CATAC).

• Clinical academics who are not in training and do not have an honorary consultant contract currently participate in the University P&DR process for clinicians which is, in effect, the same documentation as Consultant Appraisal, but performed entirely within the University without NHS input.

Courses and resources available to University staff through the Staff Development Service or the Learning and Teaching Centre are recommended widely and attended by many of our staff.

Evaluative Statement or Commentary

3.8.10 Staffing issues provide a major challenge for those who are running dental schools. The undergraduate course includes a large amount of clinical teaching, during which students undertake complex invasive procedures on patients. For safety and clinical governance reasons a high staff-student ratio is required to supervise this teaching. Unfortunately there is currently a national shortage of clinical dental academics\footnote{Dental Schools Council. Staffing Levels of Dental Clinical Academics and Dental Clinical teachers in UK Dental Schools as at 31 July 2008. http://www.dentschoolscouncil.ac.uk/documents/DSCClinicalAcademicStaffSurveyJuly2008.pdf}, which makes recruitment difficult. The problem is especially marked in Restorative Dentistry, a subject area which comprises a major part of the curriculum. It is also a subject area in which there is great interest from potential overseas taught postgraduate students. Our approach to this problem continues to involve collaboration with NHS GGC on joint staffing initiatives and the appointment of high calibre junior staff to academic and clinical training posts with a view to their eventual appointment to senior clinical academic posts. This is clearly a long-term strategy and not without risk of loss of the investment.

3.8.11 We have been very forthright about the major clinical teaching role of many of our academic staff and have appointed a significant number of Clinical University...
Teachers / Senior Clinical University Teachers. This is a trend that is now evident in many dental schools across the UK. We stress that the role played by these staff members is just as important as that played by those who are research-active. Furthermore, we actively encourage scholarship among our University Teachers, and hope that the recently formed Dental Education Research Group (3.7.4) will provide a focus for such activity.

3.8.12 One aspect of our practice which requires improvement is the process of induction for new staff and the formalisation of a process of academic mentoring for all staff, but particularly those who are more junior. These developments are on the 2009 - 2010 Work Programme for the Dental School Executive. We also need to give further consideration to workload-modelling. We have previously discussed mechanisms used by colleagues in other faculties, but have found great difficulty in defining a workload model that fits well with the delivery of all our activities.

3.8.13 The importance of professionalism in the BDS programme is recognised by all staff. This strand of the teaching has been strengthened considerably by the appointment of a Lecturer in Ethics in Relation to Dentistry, a unique post in a UK dental school.

Teaching and Learning Resources

Description of the Department's approach and practices

3.8.14 For the past 10 years the state of the physical infrastructure at the Dental Hospital & School has been causing serious concerns (3.8.19). However, over the past five years there has been major progress in improving the quality of the teaching accommodation. This has been funded through a variety of routes including the University (fund-raising via the Development & Alumni Office and Faculty Minor Works bids) and the NHS (ACT (D) slippage via NHS Education for Scotland, and NHS GGC capital funds). The major developments have included:

- Full refurbishment (including provision of state of the art IT equipment) of the two main lecture theatres.
- Refurbishment of five seminar rooms and conversion of two under-utilised practical demonstration rooms to additional seminar rooms.
- Refurbishment of the Dental School Library, including provision of a new computer cluster.
- Refurbishment of the undergraduate Student Common Room.
- Development of an Instrument Decontamination Clinical Skills Facility (unique to Glasgow Dental School).
- Extension of the Pre-clinical Skills Facility from a capacity of 36 to 46, with an upgrade of the IT equipment across the entire facility, supporting small group teaching or simultaneous large group events (due to commence February 2010).
- Expansion and refurbishment of the study area for taught postgraduate students (due to commence January 2010).
• Refurbishment of the stand-alone computer cluster (due to commence February 2010).

3.8.15 The Dental School has an excellent **support team** of administrative and technical staff, which is integral to our activity (3.8.2). Our staffing strategy fully embraces support as well as academic posts and in the recent Section re-structure, we have established an **Administration Section**, headed by the School Administrator. In relation to IT support, we have an Educational Resources Technician, (whose responsibilities include web-page development and maintenance) and a Desktop Technician (0.8 FTE).

3.8.16 One of the major factors in delivery of the BDS Programme is the very large component of hands-on **clinical teaching** that is included. As a result, the state of the **clinical environment and equipment** is key to the student experience. However, both the hardware and most of the support staffing are provided by the NHS, which is why the interface between these two organisations is so critical. The NHS Maintenance Team is small for the size of the building and the number of dental chairs for which it is responsible, each of which is a technically complex piece of equipment. Since the last DPTLA there have been difficulties with reliability of dental chairs in some areas, particularly Paediatric Dentistry, but the latter has been solved by a complete refurbishment of the Paediatric Dentistry and Orthodontics Clinics on Level 5 to a very high standard. Many of the concerns of students relate to day-to-day NHS issues, such as unreliable availability of dental records, and these are raised at a high level through the Dental School University/NHS Liaison Group, though resolution can be slow and difficult. The geographical location within the building of some of the clinical areas does not fit well with the holistic philosophy of the 2004 BDS Curriculum (3.8.22) but changing this is a long-term objective.

3.8.17 Extensive use is made of **Information Technology** in the preparation and delivery of teaching. There is widespread adoption of Moodle across all elements of the course (3.7.2; 3.7.11).

3.8.18 The **James Ireland Dental Branch Library** is an outstanding resource for both undergraduate and postgraduate students. Since the Library is embedded within the Dental Hospital & School, access from outside the building for students out of hours is a problem, despite the fact that during term-time the Library remains open until 9pm for those already in the building. This was raised at the last DPTLA and enquiries were made at Medical Faculty level about the possibility of dental students being given access to the Study Landscape in the Wolfson Medical School Building. However, this was not granted because of the priority for medical undergraduates and the related capacity issues.

**Evaluative Statement or Commentary**

3.8.19 The general fabric of the building, which is owned and operated by NHS GGC, has been a cause for concern for a number of years. There have been at least three outline business cases prepared in the last 15 years to examine the options for a new build on a variety of sites within the city. Following the 2003 General Dental Council Report, which included serious criticism of the teaching facilities, The Principal (Sir Muir Russell) and the Head of the Dental School (Prof Jeremy Bagg) met with the Deputy Health Minister and Chief Dental Officer at the Scottish Executive, when it was agreed that the University should work jointly with NHS GGC to examine the potential for a major refurbishment of the existing premises. This was taken forward by NHS GGC through formation of a ‘Re-design Project Group’, which met regularly for 18 months to develop an outline case for a major re-design and refurbishment of
the Dental Hospital & School Building. This case is now on the Health Board’s list of capital projects. However, the estimated cost is in excess of £40M and in the current financial climate, together with the backdrop of major NHS developments elsewhere, particularly at the Southern General Hospital site, there is no certainty that it will proceed. On a positive note, however, the Manager of the Oral Health Directorate has been able to extract £1M per annum recurrently over three years to carry out essential infrastructural works, including lift and window replacements, which would be part of the Re-design Project if it proceeded and which are having a very positive impact in the short term.

3.8.20 In common with many buildings of its age, the Dental Hospital & School contains large amounts of asbestos. The safe removal or encapsulation of this material as part of any capital works project adds considerably to both the time and cost and is a significant additional challenge for both University and NHS capital projects in the building.

3.8.21 One teaching facility which remains in a poor state is the biomedical teaching laboratory on Level 8. Historically this large room (50 bench spaces) has been used for teaching that required microscopy, eg oral biology, microbiology and pathology. As in many modern dental (and medical) curricula, we now include far less microscopy in the teaching and believe that the teaching experience can be improved by a move to ‘virtual microscopy’, delivered via PC’s rather than microscopes. We have recently purchased, with ACT (D) slippage funding, a digital scanning microscope to support the Glasgow component of the CLEO project (3.4.11). This will allow us to digitise the appropriate materials for our own teaching purposes. However, we need urgently to identify funding to refurbish the Laboratory with full IT capability to support the delivery of the digital teaching. Our intention is to convert it into a more adaptable multi-use facility with moveable desks and chairs and, ideally, room dividers. This would provide additional capacity for small group teaching in all subject areas of the curriculum, which would be a significant additional advantage.

3.8.22 Restorative Dentistry teaching comprises more than 50% of the clinical teaching delivered. It includes three specialties that historically were taught largely independently, namely Conservative Dentistry, Prosthodontics and Periodontology. However, the holistic and integrated philosophy of modern dental curricula, including our own, dictates that students recognise the close inter-relationship of these disciplines when treatment-planning and delivering care. At present, the Periodontology Clinic is on Level 7, the Conservative Dentistry Clinics are on Level 6 and the Prosthodontics Clinic is on Level 2. Our preferred option would be for polyclinic facilities, in which all forms of Restorative Dentistry can be delivered in all available clinics. This would also provide us with more flexible facilities in which the allocation of chairs to the teaching of different groups could be much more easily managed and which would allow dental students to work alongside students from allied dental care professions. This model is presented in the Re-design outline case currently being considered by the Health Board (3.8.19), but if that does not progress then it will be important that careful consideration is given to the educational requirements as individual smaller scale refurbishment plans proceed.
4. Maintaining the Standards of Awards

**Description of the Department’s approach and practices**

4.1 The standard of student achievement required for the award of the BDS is maintained, and measured against relevant benchmarks, by:

- Ensuring that the requirements of the regulatory body (GDC) are met.
- The quality control of assessment.
- The external examiner system.

4.2 We have discussed previously in this document the use of the GDC’s guidance in the development of our own BDS ILOs and the alignment of these ILOs with curriculum content and assessment (3.2.2). We have also already described aspects of the quality control of assessment, but, to reiterate, the essential features of our approach are:

- Blueprinting of assessment, to ensure adequate sampling of ILOs and to confirm the validity of the assessment methodology.
- Setting a pass mark for written examinations and OSCEs using a recognised standard setting approach.
- Blind double marking of non-objective written questions.
- Publishing the criteria by which Competence Assessments are judged.
- Where resources permit, using statistical analysis to confirm the reliability of results and review the performance of questions.

4.3 External Examiners are given access to all assessed material, to assessment blueprints, and to information on standard setting. They are asked to confirm that pass marks have been set appropriately. They play an important role in borderline decisions and the Dental School employs oral examinations in BDS 1 to 3 for students in this situation. Students who have gained an overall grade ‘E’ in the written examination are invited to an oral examination in which the External Examiner participates. The examiners have the discretion to moderate the grade upwards to a grade ‘D’ if they feel that the candidate’s performance in the oral examination merits this. An oral examination can never be used to moderate a grade downwards and neither can it be used to elevate a grade less than ‘E’ to ‘D’. Oral examinations are also used to determine whether a candidate who has performed very well across all components of an examination should be awarded a ‘Distinction’, which is an internal acknowledgement of excellence. External Examiners see all candidates in the Case Presentation component of the Final Examination and have the opportunity to see all candidates in the OSCE component of the Final Examination.

External Examiners also play a key role in the taught postgraduate programmes. The MSc in Primary Dental Care has received visits from its External Examiner at the end of both Year 1 (2008) and Year 2 (2009). The MSc OMFS received a visit at the end of Year 1 (2009). The reports received to date have been highly complimentary.

4.4 The BDS is not a classified degree as such. There are three categories of award: **BDS, BDS with Commendation, and BDS with Honours.** This is equivalent to the
system used for the degree of MBChB and similar systems operate in other medical and dental schools. ‘Commendation’ and ‘Honours’ in the 2004 curriculum are awarded on the basis of a complex algorithm that factors-in performance in assessments over the whole five years of the programme. The algorithm produces a ranking of students and the Board of Examiners decides on the cut-off points for each category of award. The percentage of students achieving each category is shown in the table below. However, comparisons between the 2009 graduates (2004 curriculum) and those in preceding years (pre-2004 curriculum) should be made with care as different systems were in operation.

<table>
<thead>
<tr>
<th>Year of Graduation</th>
<th>No. Graduating</th>
<th>% Commendation</th>
<th>% Honours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>61</td>
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<td>17</td>
<td>7</td>
</tr>
<tr>
<td>2008</td>
<td>79</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>2009</td>
<td>79</td>
<td>15</td>
<td>8</td>
</tr>
</tbody>
</table>

It should be stressed that UK Dental Schools tend to be highly independent in the way in which they denote higher levels of achievement and that the General Dental Council does not, in any case, recognise categories of award. The GDC is only concerned with the award of a degree that permits entry to the Register and so the standardisation of categories, and the criteria for their award, is not an issue.

**Evaluative Statement or Commentary**

4.5 As previously discussed, we are confident that the BDS ILOs reflect adequately the requirements of the General Dental Council. Furthermore, there is alignment between ILOs and assessment. Our quality control arrangements ensure that assessment processes are transparent, fair, valid and reliable; this gives us considerable confidence that students satisfying the requirements for the award of the BDS are achieving the standards anticipated by the General Dental Council. This is of importance given the GDC’s current deliberations about how it will modify its guidance to Dental Schools and quality assure their provision in the future. It is highly likely that the guidance will focus almost entirely on outcomes and that assurance will shift away from process towards the robustness of assessment.

4.6 We are increasingly confident in the robustness of our procedures for setting pass marks. As a consequence we feel there may be less need for oral examinations to make judgements in relation to borderline candidates. In theory, if the threshold mark for the award of a grade ‘D’ has been arrived at through diligent application of a recognised process, and if the marking process is as objective as possible, the marks achieved by students in standard examination components should be regarded as the final determinant of the outcome. This is the stance we have taken in the final examination (two components of which occur in BDS 4 and the third component in BDS 5) and the factors that have enabled us to do this are:

- The written component is the same as that employed in the pre-2004 curriculum finals, in which we had been employing standard setting for a number of years and in relation to which there was no option for an oral examination.
- The case presentation component already has an oral examination component for all candidates.
The new BDS 5 examination is an OSCE and we have never employed oral examinations for the potential moderation of OSCE outcomes.

Our concern about oral examinations stems from their notorious lack of reliability. Moving away from oral examinations in BDS 1, BDS 2 and BDS 3 has, however, proved difficult, since our external examiners are very attached to their use (they are common in Dental Schools). Nonetheless, oral examinations do ensure personal contact between External Examiners and borderline candidates and the External Examiner's decision in these circumstances is regarded as definitive. Oral examinations may, therefore, be useful in limiting appeals.

4.7 Our External Examiners have never questioned the standard of achievement of our students, always indicating that this is comparable with that achieved at their own and other institutions. Some external examiner comments have been highly complimentary:

...a credit to the excellent teaching and dedication of the academic staff in nurturing an interest and providing a challenging and rewarding course which the students obviously enjoyed. BDS1 External Examiner, 2009

Perhaps more pertinent to the standard of the award, our final examination is spread over BDS 4 and BDS 5, and again the achievement of the students has been complimented:

The standard of work of the students was commendable. Once again there was an excellent variety of cases demonstrating an acceptable ability of the majority of candidates. Some of the candidates were exceptional given that they still have a further year to go. BDS4 External Examiner (JC) 2009

The overall standard of the work was satisfactory – having said that, the majority of the work was markedly higher than this satisfactory boundary and ranks very highly against other institutions of which I have knowledge. BDS4 External Examiner (MT) 2009

Students demonstrated excellent communication skills, professionalism and knowledge across the dental undergraduate curriculum. They demonstrated a wide range of skills. BDS5 External Examiner, 2009

4.8 Examination psychometrics is a branch of statistics commonly used by medical examining bodies to scrutinise the robustness of assessment. This type of analysis can be very useful in measuring the performance of questions and examiners, and for looking at the reliability of entire examinations. This information is useful for those charged with maintaining question banks, training examiners and compiling examinations. It can also impact on deliberations at Boards of Examiners. It requires dedicated input from a trained statistician, both in setting up the process and in running and interpreting the analyses at the time of examinations. We are currently exploring how we can provide such a service using in-house resources but the University may wish to consider whether this is applicable to other departments and, therefore, whether this might be a legitimate development within central services.
5. Assuring and Enhancing the Quality of the Students’ Learning Experience

Description of the Department’s approach and practices

5.1 The Quality Assurance procedures related to the BDS programme have been set out in some detail in accompanying documentation (Appendix 7.2). These procedures include the means by which student and staff feedback is obtained, the Annual Course Monitoring process, and the means by which change is implemented and reported back. Student engagement with these processes has been discussed (3.7.13) where we have also described our attempts to encourage such engagement.

5.2 We believe we can point to evidence of both ‘top-down’ and ‘bottom-up’ approaches to Quality Enhancement. The top-down elements ensure the transmission of University priorities via discussion at the Dental Education Committee and thence through Sections, Course Coordinators and Teaching Committees. Standard agendas ensure that enhancement issues are discussed and good lines of communication facilitate dissemination. Further means of disseminating good practice, including quality enhancement, have been described previously (3.7.4; 3.7.5).

5.3 Examples of recent and current enhancement activities have been alluded to throughout this document. They are summarised here in relation to the three themes of the University Learning & Teaching Strategy.

Shaping the University Learning Community

• The establishment of a pathway for entry to the BDS programme for under-represented groups via partnership with Stow College and the Scottish Widening Access Programme (SWAP).

• An undergraduate selection process that is robust and fair and emphasises the intending students’ familiarity with, and suitability for, their chosen profession.

• Development of postgraduate programmes for home and overseas students.

Excellence in Learning and Teaching

• The transparent alignment of ILOs with teaching and assessment.

• Examples of Enquiry Based Learning, Peer Assisted Learning, Syndicate Learning, etc – see case studies (Appendix 7.9).

• On-line formative assignments with self-assessment.

• E-learning initiatives.

• Scholarship promoted by the Dental Education Research Group.

• Blueprinting, standard setting, and other quality control measures in relation to assessment.

• Staff appraisal and training, for example, the bespoke course for Outreach Teachers and the annual ‘Education Day’.
• Success in LTDF bids.

**Enhancing the Student Experience**

• Improving student engagement – the workshop on student representation in January 2009 and resultant action such as the development of a forum for student representatives.

• Outreach teaching – facilitating the transition to the practice environment.

• Generic graduate attributes:
  - Developing the skills of reflective learning and PDP via a compulsory and facilitated system.
  - Teaching the skills of scientific enquiry and critical appraisal.
  - Professionalism, communication skills and teamwork, covered in didactic teaching and embedded and developed in extensive clinical experience.

**Evaluative Statement or Commentary**

5.4 The implementation of a new BDS curriculum has provided an excellent opportunity for an emphasis on quality and the assurance of quality. We now have a framework in place that should be clear to all key staff, especially course coordination teams, and which lays stress on closing feedback loops. The practice of publishing the minutes of meetings where feedback is discussed and change actioned is now well embedded. We do not perceive significant barriers to student engagement in this process and we are taking active steps to encourage it further.

5.5 The Annual Course Monitoring Report (ACMR) is an essential means of summarising and reporting quality assurance processes and there has been a steady improvement in the quality of these reports in recent years. Course Coordinators make use of extensive year-end student evaluation and other feedback and respond in a generally reflective and constructive manner. Consequently, we can point to examples of significant change in response to student feedback. We need to ensure that the ACMR is shared widely with students, staff and external examiners. However, the annual monitoring process tends to be quite slow moving and we hope to respond to most issues rapidly through regular Staff-Student Liaison meetings and, if necessary, the upward reporting of issues to the Dental Education Committee.

5.6 Quality enhancement has sometimes seemed like a difficult concept to promote within the Dental School, principally because themes such as student retention and employability may not seem directly relevant. However, we have engaged with elements in these themes to improve our provision and the change of emphasis from ‘employability’ to ‘graduate attributes’ has been helpful in this respect. Much of the evidence of quality enhancement activity derives from staff working as individuals or in groups to develop new initiatives, many of which reflect innovative and scholarly approaches to learning and teaching. This hopefully points to an environment in which enhancement is encouraged and facilitated.
6. **Summary of Perceived Strengths and Areas for Improvement in Learning and Teaching**

6.1 **Strengths of the Provision**

- Between 2004 and 2009 we have introduced a **completely revised, fully integrated BDS curriculum** with early clinical contact. This required immense effort on the part of the staff, but the new course is receiving very positive feedback from students and external examiners and is fully compliant with the requirements of our professional regulator, the General Dental Council.

- We place a strong emphasis on ‘**constructive alignment**’ in which teaching, learning and assessment are driven by Intended Learning Outcomes, and strong quality assurance of assessment.

- We have a **robust and customised admissions process** and enjoy very strong competition for places from highly qualified and very motivated applicants.

- The BDS programme demonstrates excellent rates of **progression, completion, and successful graduate employment**.

- The Dental School places a strong emphasis on learning through **reflection** and other skills supporting **graduate attributes**.

- The introduction of an extensive **outreach teaching** programme for BDS students, providing an excellent case–mix and experience of working in a primary care environment, thus aiding the transition from University to practice.

- The launch of a range of **new taught postgraduate programmes**, which support personal career development of UK dentists and provide opportunities for overseas postgraduate student recruitment.

- A cadre of **highly motivated teaching staff** who are very positive about delivery and assessment of innovative forms of teaching and associated scholarship. This is evidenced by a good record of success in LTDF bids and recent publications.

- The Dental School enjoys a strong ethos of **community and collegiality** among staff and students, which provides a very supportive learning and working environment.

- The Dental School has established an **excellent relationship with NHS Education for Scotland**, which has supported and facilitated a large number of educational initiatives of great value to the BDS course in Glasgow. These include the funding of teaching and administrative posts, many aspects of outreach provision, the e-portfolio and other e-learning projects such as the Confederated Learning Environment Online (CLEO) and the 2D/3D visualisation project with the Digital Design Studio.

6.2 **Areas for Improvement**

- Despite a number of improvements to the physical teaching environment in the past five years, the **fabric of the building is still in need of significant upgrading**. Continuing interaction between the University and NHS Greater Glasgow & Clyde (the owners of the building) is required if progress is to be made.
• There is a need to improve our processes for **academic staff induction and mentoring**. This has been identified as a priority. We would also like to see the training in Learning, Teaching and Assessment that is currently available to selected NHS staff involved in teaching being made available to all such staff.

• **Staffing levels in Restorative Dentistry** are barely adequate to provide the level of support required for the extensive amount of clinical teaching. This causes practical difficulties in the delivery of teaching but, more seriously, leadership of teaching in this area is precarious and the loss of one or two staff members could prove disastrous.

• We continue to strive **to improve feedback** and to ensure that students have sufficient longitudinal indication of how well they are performing eg through use of online quizzes and more effective feedback on clinics. To this end we have begun implementation of a feedback strategy (**Appendix 7.6**).

• Now that the five years of the revised BDS curriculum have been fully introduced, there is a requirement for continuing development of the programme to enhance further the **integration of bioscience and clinical teaching**.

• Further development and support of the activities of the recently established **Dental Education Research Group** is required to facilitate its role as a focus for educational scholarship within the School.

• We will work jointly with NHS Education for Scotland to develop further the e-**portfolio** as a major strand of PDP for undergraduate students.

• The **recruitment process for overseas PG (T) students**, managed through the Faculty of Medicine Graduate School, has not worked well and we would prefer to regulate our own PG Admissions. Places for our PG (T) clinical programmes are restricted to small numbers by dental chair and dental nurse availability and by the requirement for appropriate clinical supervision. The nature of advanced clinical training demands close clinical supervision in order to achieve the required clinical and academic standard. The small numbers of available places requires personal and regular communication with prospective candidates. Over-subscription would mean that no student would receive the required training with a poor success rate. Under subscription would mean that we would not achieve our Business Plan target.

• **Inter-professional education** is an important aspect of teaching for BDS students, but its establishment has proved challenging. The ongoing expansion of the Pre-clinical Skills Facility will support joint teaching of therapist/hygienists and dental students but further work, in collaboration with the NHS, is necessary to strengthen this element of our provision.

• **Interactions with the NHS are crucial but can be difficult** and include issues that are very relevant to dental students, for example patient appointment processes and access to Medical Records. Great efforts have been made to improve communications locally, and when necessary there have been discussions at a higher level. In general terms, the major reliance of the Dental School on the NHS for many elements of the operational delivery of the clinical component of the BDS curriculum is a relatively frequent cause of frustration and challenge.
APPENDIX 7.1

BLUEPRINT FOR THE PROGRAMME ASSESSMENT SCHEME FOR THE BDS COHORT GRADUATING IN 2009
# Bachelor of Dental Surgery

## Assessment Blueprint – Cohort qualifying 2009

### 1. CLINICAL SKILLS

<table>
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<th>Learning Outcome</th>
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<th>Case Presentation</th>
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<td>4, 6, 28, 31</td>
<td>BDS1</td>
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<td>BDS1</td>
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<td>1.2</td>
<td>BDS3</td>
<td>✓</td>
<td></td>
<td>35, 38</td>
<td>BDS3</td>
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<td>BDS1</td>
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<td>1.3</td>
<td>BDS3</td>
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<td>8, 35</td>
<td>BDS1</td>
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<td>BDS2</td>
<td>BDS3</td>
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<tr>
<td>1.4</td>
<td>BDS3</td>
<td></td>
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<td>2, 3, 10, 17, 19, 20, 21, 22, 23, 25, 32, 38</td>
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<td>BDS1</td>
<td>BDS3</td>
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<tr>
<td>1.5</td>
<td>BDS3</td>
<td>✓</td>
<td>✓</td>
<td>2, 4, 5,</td>
<td>BDS2</td>
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<td>BDS3</td>
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<tr>
<td>1.6</td>
<td>BDS3</td>
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<td>2, 4, 5,</td>
<td>BDS2</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Competence Assessment</th>
<th>Assignment</th>
<th>Case Presentation</th>
<th>Written</th>
<th>OSCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7 be competent at deciding whether severely broken down teeth are restorable and how missing teeth should be replaced, choosing between the alternatives of no replacements, bridges, dentures or implants</td>
<td>√ BDS2</td>
<td></td>
<td></td>
<td>10, 18, 20, 21, 22 BDS1 BDS2 BDS3</td>
<td>BDS3 C(2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Outcome</th>
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<th>Written</th>
<th>OSCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8 be competent at designing effective indirect restorations and complete and partial dentures</td>
<td>√</td>
<td>3, 4, 7, 8 BDS2 BDS3</td>
<td>BDS2 BDS3 A(6,7) C(4)</td>
<td></td>
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</tr>
<tr>
<td>1.9 be competent at carrying out an orthodontic assessment including an indication of treatment need; be familiar with contemporary treatment techniques in orthodontics</td>
<td>√</td>
<td>17, 18</td>
<td>BDS2 BDS3 A(6,7) C(4)</td>
<td></td>
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</tr>
<tr>
<td>1.10 be familiar with the principles of treatment of dento-facial anomalies including the common orthodontic/maxillofacial procedures involved.</td>
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<tr>
<td>1.11 have knowledge of functional occlusion in health and disease and management of the disordered occlusion</td>
<td>2 BDS3</td>
<td></td>
<td>A(6)</td>
<td></td>
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</tr>
<tr>
<td>1.12 be competent at managing the oral health of children and adolescents and plan treatment for them in a manner that incorporates consideration for their expected growth and development, involving parents or guardians as required</td>
<td></td>
<td>16, 31, 35</td>
<td></td>
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</tr>
<tr>
<td>1.13 have knowledge of the management of patients with facial pain, including temporomandibular disorders, involving a recognition of when it is appropriate to refer for specialist help and advice</td>
<td></td>
<td>4, 5, 6 BDS1</td>
<td></td>
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<tr>
<td>1.14 have knowledge of management of acute infection</td>
<td></td>
<td>6, 11, 12, 13, 14 BDS2</td>
<td></td>
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</tr>
<tr>
<td>1.15 be competent at recognising and managing (at a primary care level) disorders of the oral mucosa, including malignant and potentially malignant lesions</td>
<td></td>
<td>25, 28, 31, 32 BDS2</td>
<td>B(2)</td>
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</tr>
</tbody>
</table>
1.16 be competent at recognising the oro-facial manifestations of systemic disease and be familiar with the management of patients who present in this way

1.17 be familiar with the principles of assessment and management of maxillofacial trauma

1.18 be familiar with signs of physical, emotional and substance abuse and seek advice from appropriate authorities

1.19 be competent at obtaining and recording a comprehensive history, completing an extra and intra-oral examination including the use of sensibility tests and radiographs, and deciding what appropriate emergency care and follow-up treatment is required in a child who has suffered dento-alveolar trauma.

### 2. PRACTICAL PROCEDURES

<table>
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<tr>
<th>Learning Outcome</th>
<th>Competence Assessment</th>
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<th>Case Presentation</th>
<th>Written</th>
<th>OSCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 be competent at oral hygiene instruction, dietary analysis, topical fluoride therapy and fissure sealing</td>
<td>( \surd ) BDS2 ( \surd ) BDS3</td>
<td>( \surd ) BDS1: PM/HP</td>
<td>22, 31, 33</td>
<td>( \surd ) BDS1 ( \surd ) BDS3</td>
<td></td>
</tr>
<tr>
<td>2.2 be competent at supragingival and subgingival scaling and root debridement, using both powered and manual instrumentation and in stain removal and prophylaxis</td>
<td>( \surd ) (CA) Instrumentation test – BDS2</td>
<td>( \surd )</td>
<td>10</td>
<td>( \surd ) BDS1</td>
<td>B(8)</td>
</tr>
<tr>
<td>2.3 be competent at completing a range of procedures in restorative dentistry, including preventive resin restorations, amalgam and tooth coloured direct restorations, indirect restorations, anterior and posterior crowns, and post crowns, so as to restore teeth to form, function and appearance, considering the need to preserve the health of the pulp and avoid the unnecessary loss</td>
<td>( \surd ) ( \surd ) BDS3</td>
<td>( \surd ) BDS1 ( \surd ) BDS2 ( \surd ) BDS3</td>
<td>3, 4, 36</td>
<td>( \surd ) BDS2 ( \surd ) BDS3</td>
<td>A(6) ( \surd ) C(4)</td>
</tr>
<tr>
<td>2.4 Be competent at the endodontic treatment techniques involved in management of diseases and conditions of the pulpal and periradicular tissues, in both primary and permanent teeth</td>
<td>( \surd ) ( \surd ) BDS3</td>
<td>( \surd ) BDS1 ( \surd ) BDS2 ( \surd ) BDS3</td>
<td>23, 36</td>
<td>( \surd ) BDS2 ( \surd ) BDS3</td>
<td>A(6,7,8) ( \surd ) C(4)</td>
</tr>
<tr>
<td>2.5 Be competent at the procedures necessary to provide biocompatible, functional and aesthetic dental prostheses (fixed and removable) in sympathy with patient requirements and needs</td>
<td>( \surd ) ( \surd ) BDS3</td>
<td>( \surd ) BDS1 ( \surd ) BDS2 ( \surd ) BDS3</td>
<td>1, 8</td>
<td>( \surd ) BDS3</td>
<td>A(6,7,8) ( \surd ) B(6) ( \surd ) C(4)</td>
</tr>
<tr>
<td>2.6 have knowledge of the design and choice of materials used in the production of partial and complete dentures, along with knowledge</td>
<td>( \surd ) BDS3</td>
<td>( \surd ) BDS1 ( \surd ) BDS2 ( \surd ) BDS3</td>
<td>7</td>
<td>( \surd ) BDS3</td>
<td>A(8) ( \surd ) B(6)</td>
</tr>
<tr>
<td>Learning Outcome</td>
<td>Competence Assessment</td>
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<tr>
<td>2.7 be competent at managing appropriately all forms of orthodontic emergency including referral when necessary.</td>
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<tr>
<td>2.8 have knowledge of preformed stainless steel crown and pulp therapy in primary molar teeth.</td>
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<td>36</td>
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<tr>
<td>2.9 have knowledge of the management of trauma in both dentitions</td>
<td>√BDS2</td>
<td></td>
<td></td>
<td>34</td>
<td>C(1)</td>
</tr>
<tr>
<td>2.10 have the knowledge to design, insert and adjust space maintainers and active removable appliances to move a single tooth or correct a crossbite.</td>
<td></td>
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<td>17</td>
<td>BDS3 A(5)</td>
</tr>
<tr>
<td>2.11 be competent at undertaking the extraction of teeth and minor soft tissue surgery</td>
<td>√</td>
<td></td>
<td>6, 10</td>
<td></td>
<td>√BDS3 A(2) B(1)</td>
</tr>
<tr>
<td>2.12 Have knowledge of basic dento-alveolar procedures etc.</td>
<td></td>
<td></td>
<td></td>
<td>11, 13, 20, 27</td>
<td>BDS3 C(3)</td>
</tr>
<tr>
<td>2.13 be competent at taking and processing the various film views used in general dental practice</td>
<td>√BDS2</td>
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<tr>
<td>2.14 be competent at infiltration and block local anaesthesia in the oral cavity, recognising and managing potential complications relating to its use</td>
<td>√BDS3</td>
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<tr>
<td>2.15 be competent at infection control procedures within a dental surgery environment. Have an understanding of infection control policies</td>
<td>√BDS3 √BDS2</td>
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<td></td>
<td>BDS1 BDS3 A(1) B(7)</td>
</tr>
<tr>
<td>2.16 have knowledge of inhalational and intravenous conscious sedation techniques in clinical practice</td>
<td></td>
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<td>BDS1 BDS3 B(7)</td>
</tr>
<tr>
<td>2.17 be competent at recognising medical emergencies, carrying out resuscitation techniques and immediate treatment of cardiac arrest, anaphylactic reaction, upper respiratory obstruction, collapse, vasovagal attack, haemorrhage, inhalation or ingestion of foreign bodies and diabetic coma</td>
<td>√</td>
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<td>BDS1</td>
</tr>
<tr>
<td>2.18 be competent at the appropriate prescription of drugs, monitor</td>
<td>√BDS2</td>
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<td>BDS2</td>
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</tbody>
</table>

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their effectiveness and safety, and be aware of drug interactions

3. PATIENT INVESTIGATION

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<thead>
<tr>
<th>Learning Outcome</th>
<th>Competence Assessment</th>
<th>Assignment</th>
<th>Case Presentation</th>
<th>Written</th>
<th>OSCE</th>
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</thead>
<tbody>
<tr>
<td>3.1 have knowledge of appropriate special investigations, including laboratory investigations, and the interpretation of their results</td>
<td>√</td>
<td>√</td>
<td>11, 14, 19, 20, 21, 25, 28, 29, 32 BDS1 BDS3</td>
<td>BDS1 BDS3</td>
<td>A(4) B(2,4)</td>
</tr>
<tr>
<td>3.2 be familiar with the principles which underlie dental radiographic techniques</td>
<td>BDS1 BDS3</td>
<td></td>
<td>BDS3</td>
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</tr>
<tr>
<td>3.3 be competent at the interpretation of intra-oral and dental panoramic radiographs and be able to write an accurate radiographic report</td>
<td>√</td>
<td>5, 6, 10, 23, 27 BDS3</td>
<td>BDS3</td>
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4. PATIENT MANAGEMENT

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<tr>
<th>Learning Outcome</th>
<th>Competence Assessment</th>
<th>Assignment</th>
<th>Case Presentation</th>
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<th>OSCE</th>
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<tbody>
<tr>
<td>4.1 be competent at developing, presenting and discussing prioritised individual treatment options for patients of all ages, incorporating consideration of patient expectations and goals for oral care</td>
<td>√</td>
<td></td>
<td>1, 11</td>
<td>BDS2 BDS3</td>
<td>B(2,3) C(3)</td>
</tr>
<tr>
<td>4.2 be competent at obtaining valid consent, where necessary through the intermediate consent of a parent, guardian or carer</td>
<td>35, 39, 40 BDS1 BDS2</td>
<td></td>
<td>BDS2</td>
<td>BDS2 BDS3</td>
<td>B(3) C(3)</td>
</tr>
<tr>
<td>4.3 have knowledge of the importance of psychological and social factors in the delivery and acceptance of dental care by patients</td>
<td>BDS1 BDS2 BDS3</td>
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<td>BDS1 BDS2 BDS3</td>
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<tr>
<td>4.4 have knowledge of managing patients from different social and ethnic backgrounds, in particular those with Special Care</td>
<td>25, 35 BDS2 BDS3</td>
<td></td>
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<td>BDS3</td>
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<tr>
<td>4.5 be competent at the evaluation of patients for fitness to undergo routine dental care, modification of treatment plans to take account of general medical status, and recognition of those patients who</td>
<td>3, 16, 35, 38</td>
<td></td>
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<td>BDS3</td>
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</tbody>
</table>
4.6 be competent at the appropriate referral of patients for specialist advice or treatment, including referral for general anaesthesia

4.7 be competent at the prescription, integration and management of care provided by the dental team

4.8 have knowledge of the assessment of patients for conscious sedation and general anaesthesia

4.9 be competent at informing patients or guardians of the indications, contraindications, limitations, risks and benefits of conscious sedation and general anaesthesia

4.10 have knowledge of the application of the principles of dental anxiety management (behavioural and pharmacological) to the treatment of the anxious dental patient, both child and adult

4.11 have knowledge of dental problems that may manifest themselves in elderly patients and of the principles involving the management of such problems

4.12 be familiar with the main medical disorders and aspects of general medicine and surgery that may impinge on dental treatment

5. HEALTH PROMOTION AND DISEASE PREVENTION

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<th>Case Presentation</th>
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<th>OSCE</th>
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</thead>
<tbody>
<tr>
<td>5.1 have knowledge of the principles and importance of health promotion, health education and prevention in relation to dental disease, and how these principles are applied in the context of individuals and communities</td>
<td></td>
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<td>BDS1 BDS2 BDS3 BDS2 BDS3 BDS2</td>
<td>BDS1</td>
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<tr>
<td>5.2 have knowledge of the organisation and provision of healthcare in the community and in hospitals, in the UK especially.</td>
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<tr>
<td>5.3 be familiar with the prevalence of oral disease in the UK adult and child populations</td>
<td>BDS3</td>
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<td>BDS3</td>
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</tr>
<tr>
<td>5.4 be familiar with the complex interactions between oral health, nutrition, general health, drugs and diseases that can have an impact on dental care and disease</td>
<td></td>
<td>BDS1</td>
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<tr>
<td>5.5 have knowledge of the assessment of patient risk for dental caries,</td>
<td>BDS3</td>
<td>BDS2</td>
<td>BDS2</td>
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tooth wear, periodontal disease and oral cancer and the provision of appropriate counseling and health education for the patient, in order to preserve oral hard and soft tissues, and to prevent disease

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</thead>
<tbody>
<tr>
<td>6.1</td>
<td>be competent at communication with patients, other members of the dental team and other health professionals verbally and in writing</td>
<td>√BD1 + PM/HP</td>
<td>√BD1</td>
<td>√BD2 + BD3</td>
<td>C(2)</td>
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### 6. COMMUNICATION

### 7. DATA AND INFORMATION HANDLING SKILLS

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<tr>
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</thead>
<tbody>
<tr>
<td>7.1</td>
<td>be competent at the use of information technology as a means of communication, for data collection and analysis, and for self-directed learning</td>
<td>√BD1</td>
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<tr>
<td>7.2</td>
<td>be competent at maintaining full and accurate clinical records</td>
<td>√BD1</td>
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<tr>
<td>7.3</td>
<td>Have an understanding of basic statistical concepts and methods and appreciate their relevance to dental research and dental practice</td>
<td>√BD1 + BD2</td>
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<td>C(3)</td>
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</table>

### 8. UNDERSTANDING OF BASIC & CLINICAL SCIENCES & UNDERLYING PRINCIPLES

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<tr>
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</thead>
<tbody>
<tr>
<td>8.1</td>
<td>have knowledge of the structure and function of the molecules, cells, tissues, organs and systems of the human body relevant to</td>
<td></td>
<td></td>
<td>24 BD1</td>
<td>BD1</td>
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</tbody>
</table>
8.2 have knowledge of the mechanisms of responses to insults including trauma and disease

8.3 have knowledge of disease processes such as infection, inflammation, disorders of the immune system, degeneration, neoplasia, metabolic disturbances and genetic disorders

8.4 have knowledge of diseases and disorders of the oral cavity and associated structures, their causes and sequelae, so as to inform diagnosis, prevention and management

8.5 have knowledge of oral biology, to include detailed knowledge of the form and function of teeth and associated structures, in health and disease

8.6 have knowledge of the science that underpins the use of dental biomaterials, sufficient to allow the selection and use of appropriate materials in clinical practice, including an understanding of their limitations and familiarity with those aspects of biomaterial safety that relate to dentistry.

8.7 have knowledge of the hazards of ionising radiation and regulations relating to them, including radiation protection and dose reduction.

8.8 be familiar with the pathological features and dental relevance of common disorders of the major organ systems

8.9 have knowledge of the changes that occur with normal development, growth and ageing and apply their knowledge in the management of the oral environment

8.10 Be competent at managing a Local Decontamination Unit. Obtain the “license” to manage an LDU.

9. APPROPRIATE ATTITUDES, ETHICAL UNDERSTANDING & LEGAL RESPONSIBILITIES

9.1 have knowledge of the moral and ethical responsibilities involved
<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>BDS2</th>
<th>BDS1</th>
<th>BDS3</th>
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</thead>
<tbody>
<tr>
<td>9.2 have knowledge of health and safety legislation and the maintenance of a safe working environment, including the legal basis of radiographic practice.</td>
<td></td>
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<td>B(3)</td>
</tr>
<tr>
<td>9.3 have knowledge of patients’ rights, particularly with regard to confidentiality and valid consent, and of patients’ obligations. See 4.2</td>
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<td>B(3)</td>
</tr>
<tr>
<td>9.4 be familiar with the law as it applies to records.</td>
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</tr>
<tr>
<td>9.5 be familiar with audit, peer review and clinical governance, including the need to evaluate treatment outcomes and undertake remedial action where appropriate.</td>
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<td>BDS3</td>
</tr>
<tr>
<td>9.6 be familiar with the importance of his or her own health and its impact on the ability to practise as a dentist</td>
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</tr>
<tr>
<td>9.7 be familiar with the need to recognise and take appropriate action to help incompetent, impaired or unethical colleagues and their patients.</td>
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**10. APPROPRIATE DECISION MAKING, CLINICAL REASONING AND JUDGEMENT**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>10.1 have knowledge of and apply the broad principles of scientific research and evaluation of evidence that are necessary for an evidence-based approach to dentistry including an understanding of the use of clinical pathways.</td>
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<td>B(5)</td>
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<tr>
<td>10.2 have knowledge of the importance of a comprehensive approach to oral care.</td>
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<td>√</td>
<td>35</td>
<td>B(3)</td>
</tr>
<tr>
<td>10.3 be competent at managing circumstances where the patient’s wishes are considered by the dental team not to be in his/her best interests</td>
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</table>
10.4 evaluate patients’ responses to dental care and understand how these may be affected by experience and psychological, social and

11. PROFESSIONAL DEVELOPMENT

<table>
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<tbody>
<tr>
<td>11.1 Have knowledge of, and display the attitudes necessary for, professional practice and conduct.</td>
<td>√</td>
<td>PM/HP BDS1</td>
<td></td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>11.2 have knowledge of the regulatory framework governing the permitted activities of PCDs and other health care workers.</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. PERSONAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Competence assessment</th>
<th>Assignment</th>
<th>Case Presentation</th>
<th>Written</th>
<th>OSCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1 demonstrate approaches to teaching and learning that are based on curiosity and exploration of knowledge rather than its passive acquisition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.2 demonstrate a desire for intellectual rigour, an awareness of personal limitations, an ability to provide and receive constructive criticism and a willingness to seek help as necessary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12.3 be able to manage learning in the context of establishing a philosophy of continuing professional education and development such that professional competence is maintained over a practising lifetime.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>12.4 be familiar with the causes of occupational stress and its management.</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
APPENDIX 7.2

QUALITY ASSURANCE AND QUALITY ENHANCEMENT IN THE BDS PROGRAMME
The following is provided as information for students but staff, patients, and other stakeholders, may find it useful.

Quality Assurance and Quality Enhancement are distinct but related concepts.

**Quality Assurance** is what we do to ensure that learning, teaching, and assessment in the BDS Programme is fit for purpose. By “fit for purpose” we mean that these elements:

- Serve the Aims and Intended Learning Outcomes of the programme – that is they help students to become caring, competent and reflective dental practitioners etc.
- Provide a positive learning experience – students should feel intellectually stimulated and challenged, and be supported both academically and personally during the programme.

**Quality Enhancement** moves beyond assuring ourselves that what we do is fit for purpose and seeks to ask what can be done to improve it yet further. It is continually questioning and acting to improve the success of students and enhance their learning experience.

If quality assurance and enhancement are to be more than just wishful thinking there must be procedures in place to ensure that what these terms describe actually happens. These procedures must be transparent, as must be their outcomes.

**Quality Assurance Procedures**

Figure 1 summarises the processes of Quality Assurance; they include monitoring, usually by collecting feedback from various sources; analysing the feedback obtained to determine whether objectives are being met; implementing change where required; and then further monitoring to see whether the change is effective. The process is therefore cyclical and the cycles can operate over varying timescales. In the Dental School there is an annual cycle of monitoring and a longer term cycle, in which programmes of study are reviewed by the University and, separately, by the GDC.

One of the key ways in which learning, teaching, and assessment is monitored is through feedback. This is predominantly at “Course” level and is obtained, using methods that will be described below, from the following groups:

- Students
- Staff
- External Examiners
- Patients and other stakeholders
Obtaining Student Feedback

We obtain feedback from students in a variety of ways, both formal and informal:

- Through end of year course evaluation questionnaires.
- Through externally conducted surveys such as the National Student Survey and those conducted by NHS Education for Scotland (NES).
- Through ad hoc focus groups.
- Through attendance of student representatives at Course and Programme level Staff-Student Liaison meetings and at the Dental Education Committee.
- Through a Moodle forum for student representatives.
- Through mentor meetings.
- Through informal meetings with Course Coordinators and comments passed to individual staff members.

The Dental School aims to comply fully with the University of Glasgow's Codes of Practice on
- Student Representation (http://www.gla.ac.uk/media/media_129533_en.pdf)
- Obtaining and responding to feedback from students (http://www.gla.ac.uk/media/media_107529_en.pdf)

and also the Guidance on the operation of staff-student liaison committees (http://www.gla.ac.uk/media/media_129536_en.pdf).

The Dental School places a high value on the views of students; they are always listened to and frequently provide an impetus for change. A workshop in January of 2009, attended by all Course Coordinators and student representatives, looked at the Dental School's compliance with the Codes mentioned above. Actions were proposed, many of which have been implemented, and specific examples were identified of major curriculum changes that have resulted directly from student feedback. A note of this meeting can be found on every course Moodle site.
An essential element in the Quality Assurance process is that those providing feedback are able to see how their feedback has been used and what influence it has had on decisions that affect them. For this reason Staff-Student Liaison meetings have standard agendas that emphasise “closing the loop”. Minutes of these meetings are published on Moodle so that students can see:

- That their concerns have been raised.
- What action has been proposed.
- How this has been implemented.
- How it has been followed up.

Minutes of the Dental Education Committee are published on the Dental School Intranet and provide students with insight on how their representatives have contributed to that committee and what decisions have been made. The results of important surveys such as the National Student Survey (NSS) are discussed at the Dental Education Committee and then disseminated to Teaching Committees and Staff-Student Liaison Committees. NSS results for all participating institutions are available at [http://www.unistats.com/](http://www.unistats.com/)

### Standard Agendas

#### BDS Staff Student Liaison

1. Minutes of the previous meeting
2. Standing items
   - a. Report on action points
   - b. Report from the Director of Education
   - c. Report from GDSS Honorary Staff President
   - d. Report from GDSS Student President
   - e. Reports from Course level SSL meetings
   - f. Reports from Course Representatives
   - g. Business for referral to the Dental Education Committee
3. Any other business

#### Course Level Staff Student Liaison

1. Minutes of the previous meeting
2. Report on action points
3. Report on the Annual Course Monitoring process
4. Issues related to specific teaching areas
5. Issues related to the year
6. Facilities
7. Student Support
8. Business for referral to the BDS Staff Student Liaison Committee

Although the shortest cycle formal monitoring process operates over a year, the processes outlined above mean that students’ concerns can often be addressed within a much shorter timescale.
Obtaining Staff Feedback

Feedback is obtained from staff:
- At Section meetings.
- Via section representatives at the Dental Education Committee and the Dental School Executive.
- At Course Teaching Committee meetings.
- Directly to Course Coordinators, the Director of Dental Education, Section Heads, the Head of School, etc.
- At Course and Programme level Staff-Student Liaison Committees.
- At Boards of Examiners.
- In BDS5, via a survey questionnaire of Outreach teachers.

Staff can raise any issues related to learning, teaching and assessment under standard agenda items at Section meetings, which occur three times in each session. Sections have representatives on all Course Teaching Committees, the Dental Education Committee, and the Dental School Executive. These representatives take the views of staff in their section to the relevant meetings and relay decisions back to the section. Staff are also able to see the minutes referred to above.

External Examiners

External Examiners are staff members, usually senior dental academics, from other Universities. Their role is to:

(i) in respect of the design of the assessment scheme:
- comment on the syllabus, learning outcomes and assessment scheme of the course and its delivery mechanism in the light of experiences of candidates’ learning outcomes, comparable courses and awards elsewhere and developments within the discipline or field;
- be consulted regarding proposals for the introduction or modification of a course;

(ii) in respect of a given assessment diet:
- comment on, in advance, all summative assessment instruments (or, in cases involving a high volume of continuous assessment, a sample may be provided for advance comment);
- report on the overall standards achieved by candidates and in particular on the comparability of these standards with those of candidates on similar courses or programmes in other UK Higher Education institutions;
- report on the relationship between these overall standards, programme specifications and published national subject benchmark statements;
- assess the soundness and fairness of the implementation of the assessment process;
- adjudicate where necessary, subject to the authority of Senate, over the grade to be awarded to any particular candidate;
- certify contentment with the assessment outcomes prior to their publication;
- provide an annual written report to the Principal as required by the University.\(^\text{12}\)

More succinctly, External Examiners tell the Dental School whether the learning, teaching and assessment we provide is appropriate and whether the standard achieved by students is comparable to that they have experienced at other UK institutions.

\(^{12}\) University of Glasgow Calendar, Code of Assessment for Undergraduate and Taught Postgraduate Programmes, Gen. 16
The main way in which External Examiners provide this feedback is in a written report, submitted after each diet of examinations. This is firstly scrutinised by the Senate Office before being forwarded to the Dental School. At the Dental School the Head of School, Director of Dental Education and Teaching Quality Assurance Officer all have sight of the report before it is passed to the Course Coordinator. The Course Coordinator will share its contents with the Course Teaching Committee and will compile a formal response to be sent to the External Examiner if this is required. The contents of the External Examiners report will also be included in the Annual Course Monitoring Report (see below).

**Patients and other stakeholders**

At the time of writing the Dental School had recently begun to collect feedback from patients in a systematic way. This is by means of a questionnaire issued to patients attending outreach clinics to receive treatment from BDS5 students. The intention is to extend the scope of this activity to other years of students and to conduct it within Glasgow Dental Hospital and School also. Patients are ideally placed to give feedback on students’ professionalism and communication skills.

The Dental School has close links with potential employers, particularly the local Health Boards and the NES Vocational Training establishment. We obtain feedback about our students and graduates through regular meetings involving these organisations.

**Other inputs to course monitoring**

Statistics provide us with important information about the effectiveness of our learning, teaching and assessment provision. For instance: how many students leave the programme, how many students progress from one year to the next, how many fail exams, the distribution of examination grades, etc. These statistics are scrutinised year by year and trends identified.

**Quality Assurance of Assessment**

The quality assurance of assessment is embedded in many of the processes already described. However, the Dental School places considerable importance on delivering an assessment scheme that is fair, transparent, valid and reliable. The means of achieving this merit separate consideration. By “valid” we mean that the method chosen for the assessment is capable of measuring that which it sets out to measure. This is discussed more fully, as are the other precepts of assessment, in the document “Assessment in the BDS Programme” but the implication is that for each ILO the correct method of assessment must be chosen. By “reliable” we mean that the results of the assessment should be a true reflection of the candidate’s performance. We strive to achieve these objectives of fairness, transparency, validity and reliability by:

- Blueprinting of assessment – a blueprint is a grid that maps ILOs against methods of assessment. This allows confirmation that the full range of ILOs has been adequately sampled and that the correct methods of assessment are being employed.
- Publishing exactly which ILOs will be assessed in each assessment.
- Setting a pass mark for written examinations and OSCEs using a recognised standard setting approach.
- Blind double marking of non-objective written questions.
- Publishing the criteria by which Competence Assessments are judged.
- Using the input of external examiners.
• Using statistics to confirm the reliability of results and review the performance of questions.

The Course Coordinator is responsible for all assessment within each course. In relation to examinations s/he will select questions from the question bank then put together and blueprint a paper. This will be reviewed by the Teaching Committee and the External Examiner. Once the questions are finalised a group of staff meet to complete the standard setting process. The Board of Examiners, as well as confirming results, should review all aspects of the quality assurance of assessment in the course. The Course Coordinator will use the outcomes of the Board of Examiners, together with the External Examiners’ report, in compiling the Annual Course Monitoring Report.

**Annual Course Monitoring Reports**

At the end of each academic session each Course Coordinator (BDS1-5) is required to submit an Annual Course Monitoring Report (ACMR). In this report the Course Coordinator pulls together all the sources of feedback related to the course and reports on how this has influenced change. S/He is required to report on examples of good practice and changes planned for the coming session. Thus the report is meant to be an honest reflection on things that are done well and things that need to be improved. It also provides a stimulus for Course Coordinators to think about Quality Enhancement; in particular they are asked to consider how they are responding to issues the University currently considers important. For instance, in the session 2008/09 issues highlighted by the University for particular attention were:

• Feedback on assessment.
• Obtaining and responding to feedback from students.
• First year progression.
• Equality and diversity.

Further information on the annual monitoring process can be found on the Senate Office website ([http://www.gla.ac.uk/services/senateoffice/gae/annualmonitoring/](http://www.gla.ac.uk/services/senateoffice/gae/annualmonitoring/)).

Figure 2 illustrates the various groups, committees and processes involved in the annual monitoring process for the Dental School.
Once prepared, ACMRs are submitted to the Teaching Quality Assurance (TQA) Officer. The reports are considered by the Dental School Executive with the TQA Officer present. Once they are approved as properly completed the TQA Officer summarises them to produce an overall report for the Dental School. This summary report is approved by the Dental Education Committee before being sent on to the Faculty of Medicine. Importantly, the summary report should state what responses there have been to recommendations in the previous year's report in the intervening period.

This process may appear rather long and complex but it allows scrutiny by the various committees that are empowered to take action. Where change is recommended this is considered and decisions taken. The individual ACMRs, once completed, should be shared with students, staff and External Examiners. It should be possible for all of these groups to see how their feedback has been used and they should subsequently be kept informed of the actions that have resulted. Communication pathways are in place to allow this to happen and have been described above (for instance, see Standard Agendas).

**Course and Programme Approval**

Proposals for significant changes to Courses and Programmes, or for the introduction of entirely new Courses and Programmes, must be scrutinised via a detailed process overseen by the University’s Academic Standards Committee.

**Longer Cycle Monitoring**

The University reviews each of its Departments’ Programmes of Teaching Learning and Assessment (DPTLA) on a six-yearly cycle. The Dental School, as every other department, is required to submit a detailed Self Evaluation Report reflecting upon the effectiveness of its educational provision and its procedures for Quality Assurance and Enhancement. Along with this report we are required to submit documentation such as committee minutes, ACMRs,
External Examiner reports, etc, all of which provide evidence of the effectiveness of our procedures. Submission of documentation is followed-up by a visit to the Dental School by a team assembled by the University Senate Office. This team interviews staff and students in order to investigate further the issues covered by the documentation. The outcome of the process is a report that provides an evaluation of the School’s provision, identifies good practice, and makes recommendations for improvement.

If Quality Assurance at the Dental School level is about ensuring our learning, teaching and assessment is fit for purpose, Quality Assurance at the DPTLA level is about the University ensuring that we are asking the right questions of ourselves, in the right way, and reaching the correct conclusions!

The General Dental Council has a responsibility in law for approving all educational programmes that lead to registration as a dental professional; obviously this includes the Glasgow BDS. The GDC fulfils this responsibility through a process of monitoring and inspection similar in many ways to the DPTLA process described above. Inspections take place on a roughly six-year cycle and regular monitoring occurs between inspections. The benchmark against which the GDC assesses Dental Schools is a document called The First Five Years (TFFY). At the time of writing the GDC is reviewing its approach to the quality assurance of educational programmes, in addition to revising TFFY. The third (interim) edition of TFFY can be found at:


Quality Enhancement Procedures

Quality Assurance is about monitoring and responding to feedback; Quality Enhancement should be more proactive than this. It seeks continually to ask the questions: “How can we improve the success of our students?” and “How can we enhance the learning experience of our students?” Dental Students are already generally highly successful. There is a very high progression rate from year to year and a very high rate of degree completion. However, we aim to provide students with skills that will improve their success after graduation and throughout their lives. Most quality enhancement probably occurs as a result of the actions of individual teaching staff on a day to day basis; indeed this is the foundation of quality enhancement. There are also systems within the Dental School to ensure that quality enhancement is encouraged:

- Quality Enhancement is a standing item on the agenda of the Dental Education Committee. Additionally the Dental Education Committee considers University strategy in relation to learning and teaching, which is significantly focussed on quality enhancement, and acts to implement this in the Dental School context.
- Quality Enhancement is also a standard agenda item for Section meetings.
- The lines of communication between the Dental Education Committee, Sections, Course Coordinators and Teaching Committees (see Figure 3) mean that initiatives in relation to Quality Enhancement should be fully disseminated.
Other means by which the Dental School seeks to promote Quality Enhancement are:

- Annual Education Days, in which staff are brought together from across the School to discuss and receive training on teaching, learning and assessment issues. In recent years, with the development and implementation of the 2004 BDS curriculum, these events have focussed on the improving the quality of assessment.
- Annually updated written clinical teaching synopses.
- Annual in-service training days for clinical teaching staff.
- Induction and update training for Outreach teachers.
- A bespoke 6-day package on teaching and learning developed in conjunction with NES for Outreach teachers.
- Financial support for an initial tranche of six clinical teachers to study for a postgraduate Certificate in Medical Education.
- The promotion of scholarship related to teaching and learning through the activities of the Education Research Group.
APPENDIX 7.3

ASSESSMENT IN THE BDS PROGRAMME
Introduction

The purpose of this document is to provide a guide for students to the process of designing and marking assessments in the BDS programme at Glasgow.

One of the first questions to ask about any assessment is: “Why are we doing it?” In the case of the BDS Final Examination the purpose is to be sure that a student is fit to graduate with a degree that will entitle them to inclusion on the UK Dentists Register, and therefore to practise dentistry. All preceding assessments are to determine whether adequate progress is being made towards that goal.

The second question is: “What is being assessed?” Previously, a common answer to this question might have been: “What has been taught will be assessed”. But how do we know that what has been taught is appropriate or relevant? Any programme of study should start out by defining what it is the learner will be expected to know or do at the end of it. The Dental School has done this in the form of Intended Learning Outcomes. The educational experience, what we sometimes simplistically refer to as “teaching”, should lead the student towards attainment of the outcomes and assessment should enable a judgement to be made as to whether those outcomes have indeed been attained. To summarise, the answer to the question “What is being assessed” should be “The attainment of previously stated intended learning outcomes”. This is our aim in designing assessment in the BDS programme.

Types of Assessment

You will encounter two “types” of assessment in the BDS programme, summative and formative.

Summative assessment is an “end-point” assessment. It determines whether you have attained a particular outcome and this in turn will allow a decision to be made – that you may, for example, be allowed to progress to the next stage of the programme or to graduate.

The main summative assessments in the BDS programme are:

- All components of professional examinations
- All assignments that are formal course requirements
- Competence assessments

The purpose of formative assessment is to provide feedback, allowing the student to form a judgement about their progress and to identify and address shortcomings. All assessment should have a formative element but some assessment is conducted purely for this purpose and has no summative function. In the BDS programme examples of purely formative assessment might be the continuous assessment grades that are awarded in clinics, and MOODLE quizzes and assignments. Formative assessment is very much dependent upon feedback and this is discussed later.
Methods of Assessment

Various methods of assessment are employed and these are matched to the type of outcome that is being assessed. For instance, if an outcome requires you to “Have Knowledge of”, this will most likely be assessed in a “written” examination or assignment. We use different types of examination question: single best answer MCQ’s, modified essay questions, multiple short answer questions, extended matching questions, etc. These question types allow testing of such attributes as factual recall, interpretation of information, problem solving and judgement, and the outcome of such testing is used to infer that you “have knowledge of” or you are “familiar with”.

However, actual clinical skills need to be assessed in a different way. Let us imagine an assessment in which the aim is to determine your ability to prepare a tooth for a crown. Asking you to write an essay on tooth preparation would allow the assessor to infer whether or not you know how to do it but not that you actually can do it. To determine your actual ability to prepare the tooth you would have to be observed doing it. Hence this type of skill is assessed in the form of “Competence Assessments”, done in the clinic and involving procedures performed on patients. There are a number of competence assessments to be completed in each year of the programme and these are stipulated in course information. Each assessed procedure is broken down into the important stages and performance is measured against criteria for each stage, which are freely available to students.

An Objective Structured Clinical Examination (OSCE) is another means of testing clinical skills. In this type of examination a candidate progresses around a series of stations at which different skills are tested, often along with elements of relevant knowledge. This allows a large number of skills to be assessed in a relatively short period of time.

A “Case Presentation” examination involves a candidate presenting a patient he or she has treated, usually to two examiners. The presentation follows a standard format and is followed by questions from the examiners. This method allows a variety of clinical skills to be assessed.

Essentially, a range of assessments allows testing of the broad range of knowledge, skills and attributes set out in the intended learning outcomes of the BDS programme, with particular assessment methods being carefully matched to particular outcomes.

Sampling

It is not possible to assess each and every intended learning outcome. You will be informed of absolute requirements – usually learning outcomes that require competence assessments – in the course documentation. When it comes to professional examinations, however, you should assume that you may be asked questions in relation to any of the intended learning outcomes relevant to your year (this means all the intended learning outcomes for the Final Examination). In reality you will be assessed on a “sample” of the learning outcomes. We monitor this sampling to ensure that over the course of several diets of the examination all the outcomes are assessed.

Standards

This section deals with how assessments are graded.

The Dental School complies with the principles of the University of Glasgow’s Code of Assessment, although we have tailored aspects of its practical application to make it relevant to dentistry.
The outcome of assessment (with the exception of competence assessments) is expressed as a grade. The grades are derived from two schedules, Schedule A and Schedule B, which are attached as an appendix to this document. Schedule B relates to the assessment of practical and clinical skills and Schedule A relates to everything else. How are these schedules used?

When, for instance, a long piece of written work, such as an assignment, is being graded the assessor must make a judgement about the grade to be awarded. The assessor would do this by referring to the “verbal descriptors” associated with each grade in Schedule A. A similar approach is taken for some stand-alone clinical assessments, such as the case presentation, except that the grade would be awarded with reference to the descriptors in Schedule B.

However, question papers in BDS professional examinations, because of the way in which the questions are marked, yield a numerical outcome (i.e. a candidate scores x out of y, or z %). But what does this number or percentage score mean? Often, in the past, 50% was accepted as a pass mark, but why? For any examination, but particularly for a professional examination, why does obtaining only half of the marks available signal an acceptable performance? This approach is no longer considered justifiable and so for every individual examination a decision has to be made about the level of performance that represents the minimum acceptable level. This process is called Standard Setting. It works in the following way.

You will have noticed that, in both schedules, grade “D” is the “just pass” grade. For each examination paper that is set the team of examiners look at each question in turn and decide what the “just pass” candidate would score for that individual question. Once agreement has been reached for every question the “just pass” mark for the whole paper is calculated. (The actual process used is called the Angoff method.) This “just pass” mark then becomes the threshold for a D grade, which is also likely to include a small range of marks just above the threshold. The way in which numerical marks map onto grades above and below “D” is, again, a matter for the judgement of the team of examiners. A similar process is used for OSCE’s.

Where an examination consists of different components, the grades from those components will be aggregated, with the various weightings incorporated, to produce the overall grade. However, grades from Schedule A cannot be aggregated with those from Schedule B. The reason for this is that assessments graded under Schedule A are, by definition, assessments of totally different kinds of outcome to those assessed under Schedule B. It therefore makes no sense to aggregate them (for instance, how can knowing about diabetes compensate for inability to recognise a scaling instrument?). For this reason regulations for professional examinations will state which components are aggregated and which must be passed independently.

The outcome of competence assessments is expressed as “Competent” or “Not Yet Competent” as further elaboration is not considered helpful. However, feedback in relation to either outcome is very important (see below).

**Oral Examinations (Vivas)**

In an oral examination you answer questions from one or more examiners, often including an external examiner, face to face.

Oral examinations are used in the BDS 1-3 professional examinations in borderline situations. If you obtain a grade E (marginal fail) in the written component of the examination, an oral examination will provide you with the opportunity to present evidence, by answering the questions put to you, that may allow your grade to be adjusted upwards to a D (bare pass). An oral examination will never be used to reduce your grade. Unfortunately if the grade you have achieved in the written component is an F then the position is taken that an oral examination could not possibly provide sufficient evidence to allow your grade to be increased to a D.
Oral examinations are also used in these examinations for candidates who have achieved very high grades, to determine whether they should be awarded a **distinction**. A distinction is recognition by the Dental School of a particularly meritorious performance.

**External Examiners**

External Examiners are generally members of academic staff of other dental schools, usually within the UK. They provide external "quality assurance" of our examinations, ensuring that they are fair and set at the appropriate standard. Where there is contention regarding decisions at the Board of Examiners the opinion of the external examiner carries considerable weight.

**Clinical Continuous Assessment**

Your work in clinics, both within and outside of the Dental Hospital, is graded on a 1-9 scale. This is the same scale used for assessment in the early postgraduate years (Vocational Training etc.). The nine marks are grouped into three bands as follows:

- 1-3 = Needs Improvement
- 4-6 = Satisfactory
- 7-9 = Superior

The assessor will first decide which of the bands applies to your work and then whether it falls in the lower, middle or upper part of the range. For example, the assessor may decide that your work still requires improvement, but that it is almost satisfactory, in which case a grade 3 would be appropriate.

The standard against which the judgement is made is that we would expect at graduation. This can sometimes seem harsh, especially when you are just starting clinical practice as grades of 1 to 3 are likely to be awarded. But as you become more accomplished you should see your grades gradually improve.

Large numbers of clinical staff are involved in awarding continuous assessment grades and students can sometimes become concerned at the inevitable inconsistencies that result. Remember that the grades themselves are relatively unimportant. What is important is the feedback they give you on your progress and this feedback should be supplemented by comments from the assessor, explaining why a particular grade has been awarded.

**Feedback**

Assessment can only have a formative function if it is accompanied by feedback. Feedback should tell you what you have done well and what needs to be improved. This should be a routine part of continuous assessment, as described above, and of competence assessments. It is sometimes more difficult to provide in relation to large scale assessments, such as professional examinations, but students can and should contact Course Coordinators for individual feedback should they wish it. **This is essential for those who have failed examinations.**

It is important that you do not consider your role in feedback as a purely passive one. Part of becoming a reflective practitioner is thinking about your strengths and weaknesses and this involves actively seeking feedback, potentially from a number of sources, and making good use of it.
APPENDIX 1

SCHEDULE A (for use in BDS examinations)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Primary verbal descriptors for attainment of learning outcomes in BDS Examinations.</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Highly impressive range and depth of attainment of intended learning outcomes, sufficient to support obvious competence when applied in a clinical context.</td>
<td>Honours*</td>
</tr>
<tr>
<td>B</td>
<td>Impressive range and depth of attainment of intended learning outcomes, sufficient to support obvious competence when applied in a clinical context.</td>
<td>Commendation*</td>
</tr>
<tr>
<td>C</td>
<td>Clear attainment of most of the intended learning outcomes, sufficient to support obvious competence when applied in a clinical context.</td>
<td>Solid Pass</td>
</tr>
<tr>
<td>D</td>
<td>Incomplete but adequate attainment of intended learning outcomes, sufficient to support an acceptable level of competence when applied in a clinical context.</td>
<td>Bare Pass</td>
</tr>
<tr>
<td>E</td>
<td>Attainment deficient in respect of specific learning outcomes, not yet sufficient to support competence when applied in a clinical context.</td>
<td>Fail</td>
</tr>
<tr>
<td>F</td>
<td>Attainment of intended learning outcomes seriously deficient, strongly suggesting incompetence when applied in a clinical context.</td>
<td>Bad Fail</td>
</tr>
<tr>
<td>H</td>
<td>No evidence of attainment.</td>
<td>No Marks</td>
</tr>
</tbody>
</table>

*These terms refer to the standard expected of a potential candidate for the award of a BDS with Honours or Commendation respectively.
# SCHEDULE B

<table>
<thead>
<tr>
<th>Primary Grade</th>
<th>Primary verbal descriptors in respect of demonstration of professional practical competencies and the supporting intellectual knowledge</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Exemplary and polished demonstration of the required practical competencies, with focussed sensitivity to the needs of the subject, the complexities of the operational context and the wider implications of the procedures or practices.</td>
<td>Honours Standard</td>
</tr>
<tr>
<td>B</td>
<td>Efficient and confident display of the required practical competencies, an evident appreciation of the possible practical complications demonstrating initiative and flexibility of approach.</td>
<td>Commendation Standard</td>
</tr>
<tr>
<td>C</td>
<td>Clear demonstration of attainment of the required practical competencies, with appropriate familiarity with relevant procedures in a range of contexts.</td>
<td>Clearly competent</td>
</tr>
<tr>
<td>D</td>
<td>Adequate independent performance of practical competence suitable to routine operational contexts.</td>
<td>Minimally competent</td>
</tr>
<tr>
<td>E</td>
<td>Presently inadequate performance of the required practical competencies, but evidently aware of personal limitations and likely to attain sufficient practical competence through practice.</td>
<td>Marginal fail</td>
</tr>
<tr>
<td>F</td>
<td>Not presently capable of independent performance of the appropriate practical competencies, lacking in perception in the operational context and prone to errors of judgement and faulty practice.</td>
<td>Absolute fail</td>
</tr>
</tbody>
</table>
APPENDIX 7.4

COMPETENCE ASSESSMENT MARKING SHEET AND ASSOCIATED CRITERIA
COMPETENCE ASSESSMENT

Learning Outcome 2.14: Be competent in the principles and practice of infiltration and block anaesthesia.

(INFILTRATION / INFERIOR ALVEOLAR NERVE BLOCK) (delete as required)
(This competence needs to be assessed during the procedure)

Student’s Name………………………………………………………………………
Student’s Code……………………………………………………………………...
Date Completed……………………………………………………………………

<table>
<thead>
<tr>
<th>Component assessed</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the student select the correct LA technique for the dental procedure?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student know the expected distribution of anaesthesia?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student select the appropriate anaesthetic agent for patient and procedure?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student have the appropriate knowledge of properties of the selected agent?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student select the correct equipment for the injection to be given?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student check the LA Cartridge (expiry date, damage etc)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the procedure explained in appropriate terms for the patient?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student use topical anaesthesia appropriately (including drying the mucosa)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the local anaesthetic agent deposited in the correct position?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the injection technique correctly carried out? (including aspiration and rate of injection)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student provide the appropriate distraction / behaviour management during the administration of local anaesthesia?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the student wait for and ensure LA effective before starting treatment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the LA was ineffective, did the student take appropriate remedial steps?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were the needle and cartridge disposed of correctly?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OVERALL ASSESSMENT

<table>
<thead>
<tr>
<th>Please tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent</td>
</tr>
<tr>
<td>Not yet competent</td>
</tr>
</tbody>
</table>

ASSESSOR 1                     ASSESSOR 2
Name (Print)                   Name (Print)
Signature                       Signature
Learning Outcome 2.14: Be competent in the principles and practice of infiltration and block anaesthesia.

(INFILTRATION / INFERIOR ALVEOLAR NERVE BLOCK) (delete as required)

Competency Assessments – Student Information

How to book this assessment:
Students identify a suitable patient with their supervisors at the clinical session, in any clinical situation where local anaesthesia is administered.

Approved assessors for this assessment:
Normally two assessors from the Section list of approved assessors will be required.

Record keeping

Competence Assessments will be recorded using carbonless copy forms. The assessor should give the student the carbonless copy, which they should file in their Portfolio, together with this information document. The assessor should send the original to Phyllis Cook for record keeping and retention.

Deadline for completion;
As indicated by a specified date in August, to be advised before the end of Whitsun term.
Learning Outcome 2.14: Be competent in the principles and practice of infiltration and block anaesthesia.

(INFILTRATION / INFERIOR ALVEOLAR NERVE BLOCK) (delete as required)

Criteria to be assessed and guidance for students.

<table>
<thead>
<tr>
<th>Components assessed</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the student select the correct LA technique for the dental procedure?</td>
<td>The student should select the appropriate local anaesthetic technique e.g. an IAN block for a lower molar. The gingival tissue should only be anaesthetised if clinically indicated, i.e. a long buccal should not be used for routine cons in a lower molar tooth.</td>
</tr>
<tr>
<td>Did the student know the expected distribution of anaesthesia?</td>
<td>The student should be able to describe the distribution of anaesthesia achieved with the chosen technique.</td>
</tr>
<tr>
<td>Did the student select the appropriate anaesthetic agent for patient and procedure?</td>
<td>The normal local anaesthetic solution would be lidocaine and epinephrine. The student should be able to indicate reasons for choosing an alternative solution.</td>
</tr>
<tr>
<td>Did the student select the appropriate needle for the injection to be given?</td>
<td>The student should be able to select the correct needle for the injection – a long for an IAN block or a short for other injections.</td>
</tr>
<tr>
<td>Did the student check the LA Cartridge (expiry date, damage etc)?</td>
<td>The student should be able to determine whether the local anaesthetic is fit for use in terms of being the agent required, in date, and free from damage.</td>
</tr>
<tr>
<td>Was the procedure explained in appropriate terms for the patient?</td>
<td>The student should be able to explain to the patient in terms that are comprehensible and non threatening what is going to occur.</td>
</tr>
<tr>
<td>Did the student use topical anaesthesia appropriately?</td>
<td>The student should dry the mucosa before applying the topical anaesthetic. Benzocaine containing topical anaesthetic should be allowed to act for a minimum of 30 seconds while lidocaine based topical anaesthetics require at least 1 minute.</td>
</tr>
<tr>
<td>Was the local anaesthetic agent deposited in the correct position?</td>
<td>The student should puncture the mucosa at the correct point, namely the depth of the buccal sulcus for infiltrations or the point where the apex of the buccal pad of fat meets the pterygomandibular raphe for IAN blocks (With the appropriate adjustment in children). The student should advance the needle until the tip overlies the apex of the tooth for infiltrations or bony contact is made with 0.5cm of the needle visible intraorally for IAN blocks.</td>
</tr>
<tr>
<td>Was the injection technique correctly carried out?</td>
<td>The student should aspirate twice. Provided a negative aspiration is achieved the local anaesthetic should be injected no faster than 1ml per minute. If a positive aspirate is seen the needle position should be adjusted until two successive negative aspirations are achieved.</td>
</tr>
<tr>
<td>Did the student provide the appropriate distraction / behaviour management</td>
<td>The student should provide continued verbal distraction and reassurance during the administration of the local anaesthetic.</td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>during the administration of local anaesthesia?</td>
<td>The student should wait for at least 1 minute following the administration of an infiltration and 5 minutes following an IAN block. The student should ask about soft tissue anaesthesia. Students should NOT probe the gingival tissues unless the tooth is being extracted.</td>
</tr>
<tr>
<td>Did the student wait for and ensure LA effective before starting treatment?</td>
<td>In the event of the LA being ineffective, the student should discuss the potential reasons and advance suggestions for how the situation could be rectified.</td>
</tr>
<tr>
<td>If the LA was ineffective, did the student take appropriate remedial steps?</td>
<td>The student should ensure safe disposal of the needle and cartridge into the appropriate sharps container and return of the handle for sterilisation.</td>
</tr>
</tbody>
</table>
APPENDIX 7.5

THE MARKING SHEET FOR PRESENTATION OF A PATIENT IN AN EXAMINATION SETTING
**Intended Learning Outcome**

<table>
<thead>
<tr>
<th>Evidence is completely lacking</th>
<th>Some evidence but not enough</th>
<th>Evidence is just adequate</th>
<th>Evidence clearly satisfactory</th>
<th>Evidence suggests a high level of attainment</th>
<th>Evidence suggests a very impressive level of attainment</th>
</tr>
</thead>
</table>

**Note to examiners:**
- For each of the ILOs below ask “to what extent does the evidence derived from the candidate allow me to infer that the outcome has been attained?” – place a tick in the appropriate box.
- Remember that evidence is derived from the whole performance – poster presentation, verbal presentation and answers to questions.
- The overall grade should reflect the distribution of the levels of attainment for individual outcomes but is not a mechanistic summation – refer to Schedule B.

**Intended Learning Outcome**

- be competent at obtaining and recording a **comprehensive and detailed history** to include the chief complaint and history of present illness.
- be competent at obtaining and recording a relevant **medical history**, including details of current medications, which identifies both the possible effects of oral disease on medical well-being, and the medical conditions, and drugs, that affect oral health and/or dental treatment.
- be competent at **examining** the oral soft and hard tissues and **diagnosing** the various diseases and abnormalities of the teeth and periodontal tissues.
- be competent at **planning**, in an integrated fashion, preventative, non-operative and operative care for patients with periodontal diseases, dental caries, tooth wear and failing restorations.
- have knowledge of appropriate **special investigations**, including laboratory investigations, and the interpretation of their results.
- be competent at the **interpretation of** intra-oral and dental panoramic **radiographs** and be able to write an accurate radiographic report.
- be competent at developing, **presenting and discussing** prioritised individual treatment options for patients of all ages, incorporating consideration of patient expectations and goals for oral care.
- have knowledge of the importance of a **comprehensive approach** to oral care.

**Overall Grade**

**Comments:**

Examiner A (Sign & Print)  Examiner B (Sign & Print)
APPENDIX 7.6

DENTAL SCHOOL STRATEGY FOR IMPROVING FEEDBACK TO STUDENTS
## Dental School Strategy for Improving Feedback to Students

<table>
<thead>
<tr>
<th>Action</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No summative assignment will be set unless arrangements for feedback have been considered.</td>
<td>Jan 2010</td>
</tr>
<tr>
<td>2. Feedback for submitted summative assignments may be delivered in a variety of ways. Individual written feedback is desirable but may not always be possible. Consideration should be given to the development of standardised feedback forms for each assignment. An alternative is to provide feedback to the whole class on general strengths and weaknesses. Grades should be returned along with feedback <strong>within fifteen working days of submission of the assignment.</strong></td>
<td>Immediate</td>
</tr>
<tr>
<td>3. Class feedback sessions should follow all mock and professional examinations. These should occur within three weeks of publication of the results where practicable. We will continue to offer one to one feedback for students who have failed examinations.</td>
<td>Immediate</td>
</tr>
<tr>
<td>4. Clinical teaching staff should be strongly encouraged to provide constructive verbal feedback when providing clinical assessment grades. This should be preceded by a phrase such as “here is some feedback” so that students are in no doubt that this is what is happening.</td>
<td>Immediate</td>
</tr>
<tr>
<td>5. The next edition of the “Points” book will include all areas of clinical dentistry and will emphasise feedback. This will be achieved by including a box with “feedback” on the slips – the student will be required to sign this, signifying that they have received feedback from the grading staff member.</td>
<td>Session 2010/11</td>
</tr>
<tr>
<td>6. The “tutorial” or “plenary” session in Outreach clinics will be designated a “Feedback Session” and will be focussed on reflection on the day’s/week’s clinical activity.</td>
<td>Immediate</td>
</tr>
<tr>
<td>7. Consideration should be given to how clinical sessions throughout GDH could be organised so as to allow group reflection and feedback sessions. This may not always be practical and may become less of a requirement if individual feedback improves following implementation of the action described above in “5”.</td>
<td>Flexible</td>
</tr>
<tr>
<td>8. We will continue to provide feedback on formative assignments using the well-established means of posting model answers and inviting self-directed learning through written comparisons.</td>
<td>Completed</td>
</tr>
</tbody>
</table>

### Note on Assessment:
Information for students on assessment arrangements should be accompanied by a reference to the document “Assessment in the BDS Programme”, available on MOODLE. This sets out the principles used by the Dental School in conducting assessment and the general criteria applied in marking. More specific criteria applicable to particular assessments should always be supplied to the students in advance.
APPENDIX 7.7

PERSON SPECIFICATION FOR ADMISSION TO THE BDS COURSE
The BDS Person Specification is used to select applicants who will be invited to submit an Admissions Portfolio and attend for interview. It states the qualities we consider important in applicants who wish to study Dentistry. These qualities or criteria are classed as either essential or preferred. Essential criteria describe the minimum requirements to study Dentistry, whereas preferred criteria describe those that would enhance your application when competition is high i.e. in years when a large number of applicants meet the essential criteria.

<table>
<thead>
<tr>
<th>Requirements to Criteria</th>
<th>Essential</th>
<th>Preferred</th>
<th>Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Essential - A minimum period of 13 years of study at school is required.</td>
<td>Strong preference will be given to applicants gaining English, Mathematics and Science subjects at Standard Grade - 1 or Intermediate 2 -A.</td>
<td>UCAS form.</td>
</tr>
<tr>
<td><strong>Academic</strong></td>
<td></td>
<td>Preference will be given to applicants taking either Advanced Higher Chemistry or Advanced Higher Biology.</td>
<td>UCAS Application Form.</td>
</tr>
<tr>
<td></td>
<td>Higherers</td>
<td>Preference will be given to applicant with both Higher Mathematics and Higher Physics by the end of S6.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AAAAB in five different subjects by the end of S6, with at least AABB at first sitting in S5. You are not considered for entry to Dentistry from S5. Must have Higher Human Biology/Biology at grade A (both acceptable) and Higher Chemistry at grade A, or grade B if Advanced Higher. Must have Higher English Must have either Higher Mathematics or Higher Physics. It is recommended that you take Essential Subjects in S5 rather than deferring to S6.</td>
<td>For guidance only You may wish to consider choosing some of the following subjects if the choice is available within your school Higher Human Biology rather than Higher Biology. If you have an aptitude consider taking Higher Arts, Art and Design, Music – these subjects give an indication of manual dexterity. Higher Psychology can also be a helpful subject if offered by your school. Preference will be given to applicants gaining English, Mathematics and Science subjects at GCSE grade A A. Strong preference will be given to applicants with AS English.</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>AAB in three different subjects by the end of year 13, with at least BBB at first sitting in year 12 of AS. Must have A2 Human Biology/Biology (both acceptable) at grade A and A2 Chemistry at grade A. General Studies is not acceptable as a third subject at A2.</td>
<td>AS grades – we will request confirmation of first sitting of AS grades even if these are not yet certificated.</td>
<td></td>
</tr>
<tr>
<td>Graduate applicants must have a minimum of a 2:1 Honours Degree. Resit applicants must have previously applied to Glasgow and gained at least BBC at first sitting of A2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Work-Shadowing

All applicants must have work-shadowing experience, preferably within a General Dental Practice setting. Applicants with less than 3 days (or equivalent) work-shadowing experience will not be invited to interview. The 3-day requirement does not necessarily mean that all contact time must be with the dentist, it should include time with the dentist but it is equally important to understand the roles of other members of the dental team. **Minimum 3 days – Maximum 14 days.**

### Activities within school and outside of school

Applicants must have participated in some form of extra curricular activity within the school, and outside of school. These activities should demonstrate that you are:

- Able to analyse information and be capable of independent thought;
- Able to be self-critical and self-motivating;
- Able to plan and think on the spot and enjoy problem solving;
- Capable of working in a team and also have the capacity to act as a leader, and:
- Have a caring nature, empathy, are trustworthy and respectful of the views of others, and able to put people at ease, demonstrating good communication skills, and have:
- Evidence of manual dexterity, creativity and spatial awareness.

---

All applicants are required to sit the UK CAT and submit a portfolio as part of the admissions process. **Applicants who do not submit a portfolio will not be invited to interview.** The Portfolio may be viewed on the Dental School website – this is for information only – it must not be submitted to the Dental School in advance of your application to UCAS. The portfolio must not be word-processed. **It should be hand-written.**
APPENDIX 7.8

TEMPLATE OF THE BDS ADMISSIONS PORTFOLIO
1. Please read the notes on each page before completing the Portfolio.

2. You must enter your UCAS application number on each page of the Portfolio.

3. Do not word-process you Portfolio. It must be hand written.

4. Do not enter your UKCAT score in your Portfolio. The Portfolio, UK CAT score and interview performance are assessed independently of each other.

5. As part of the admissions process we will consider the information you provide in the Portfolio against the following selection criteria:
   - That you provide evidence of an interest in Dentistry. That you have an understanding of the career you are choosing and what it means to be in a Profession.
   - That you provide evidence that you are able to analyse information and are capable of independent thought; that you are able to be self-critical and self –motivating; and that you have the ability to plan, think on the spot and enjoy problem solving.
   - That you have a caring nature, empathy, are trustworthy and respectful of the views of others; that you are able to put people at ease and have good communication skills; and are able to provide evidence that you are capable of working in a team and also have the capacity to act as a leader.
   - That you provide evidence of manual dexterity, creativity and spatial awareness.
   - Please note the written component of your communication skills is assessed within the Port.

6. The Admissions Committee will not see your UCAS application form so it is important that you complete the Portfolio as fully as possible. The Portfolio is limited to four pages and you must not exceed the space provided. All applicants are required to submit the Portfolio as part of the admissions process. Applicants who do not submit a Portfolio will not be invited to interview.
Information presented on this page will be assessed against the following ESSENTIAL criteria

**ESSENTIAL**
- All applicants must have work-shadowing experience, preferably within a General Dental Practice setting, before attending for interview.
- Applicants with less than 3 days (or equivalent) work-shadowing experience will not be invited to interview. The 3-day requirement does not necessarily mean that all contact time must be with the dentist, it should include time with the dentist but it is equally important to understand the roles of other members of the dental team.

<table>
<thead>
<tr>
<th>Where was your work-shadowing experience gained?</th>
<th>Please indicate the amount of time (in days) you have spent work-shadowing.</th>
<th>Please provide the name of the dentist you work-shadowed.</th>
<th>Please ask the dentist you work-shadowed to confirm your attendance by either signing below or attach a letter from him/her to your Portfolio.</th>
</tr>
</thead>
</table>

Please use the space provided below to describe how the experience:
- Confirmed your interest in Dentistry;
- Improved your understanding of a career in Dentistry;
- Gave you an understanding of what it means to be a member of a Profession.

UCAS NUMBER
ESSENTIAL - Applicants must have participated in some form of extra curricular activity within the school, and outside of school. These activities should demonstrate that you are:

- Able to analyse information and be capable of independent thought;
- Able to be self-critical and self-motivating;
- Able to plan and think on the spot and enjoy problem solving;
- Capable of working in a team and also have the capacity to act as a leader, and:
- Have a caring nature, empathy, are trustworthy and respectful of the views of others, and able to put people at ease, demonstrating good communication skills.

Please use the space below to describe how you meet the above criteria.
ESSENTIAL – It is essential that you provide evidence of manual dexterity, creativity and spatial awareness.

This is one of your opportunities to indicate what makes you think that you have practical skills necessary for a career in Dentistry.

Evidence that may be helpful in this section could include certificates, samples of art, arts & crafts or needlework, to confirm manual dexterity through musical ability, arts & crafts or design work. You may indicate that, if selected for interview, you would bring examples of such work. We encourage you to attach photocopies of certificates or photographs of items of coursework, which have been assessed but would be difficult to bring to interview.

If you cannot provide evidence of manual dexterity please indicate what makes you think that you have appropriate manual skills, hand to eye co-ordination, creativity and spatial awareness necessary for a career in Dentistry.

Please use the space provided below.
Please ensure any examples of manual dexterity you provide here are also brought to the interview as the portfolio assessors will not be the same people who will interview you.
APPENDIX 7.9

CASE STUDIES OF INNOVATIONS IN TEACHING
1. BDS3 PMHP Assignment – group work and presentation

As part of Patient Management / Health Promotion programme of studies in BDS 3, the dental public health teaching group have developed a research-informed teaching approach involving enquiry-based learning. This is a student-led group work project fostering a team working culture. The project contributes to achieving curriculum learning outcomes in the areas of public health, health improvement, team working, and communication skills – both written and verbal.

Working within small groups of approximately eight students, over the course of the year (with sessions set as-side across the year in the timetable), the students developed a learning resource to support efforts to tackle the entrenched oral health problems in children. In many cases this involved the innovation of technology and the application of learning theory appropriate to the target age-group. Thus, students themselves were learning about how to engage and transfer knowledge and skills to others for health improvement.

This project involved enquiry-based learning and student-led research to justify the choice of target group, setting, content and format of resource, as well as the approach to delivering health improvement. The project had team / group working elements as well as an individual component including a personal reflection on their group dynamic and on the individuals’ contributions. The project report has been embedded as a summative assessment with successful completion a requirement for progression.

A most impressive range of resources were developed which demonstrated the students’ engagement with a range of issues, including: the public health problem, theories of child learning and gaming, teaching / learning materials, as well as the potential and application of technology including a game, the internet and social networking.

Specific examples of projects included the development of interactive internet sites, a social networking site, a board game, nursery and school teaching materials, home parent / carer resources, an infomercial, and a song.

Students presented their work back to the whole year and to a panel of judges who asked questions and encouraged debate on the content and approach of their resources. A group prize for the resource (funded by the British Dental Association) and an individual prize for the individual project write-up were awarded based on set criteria.

We are currently exploring whether some of these resources and ideas can be developed further and actually put into practice in health improvement activities across the NHS.

Student and staff feedback and evaluation has continued to inform the development of this project within the PM/HP teaching in Year 3 and the project has been adjusted to give students more information and feedback throughout the year (including the submission of an early protocol), and to set aside more sessions for group work in the time-table.

Lorna Macpherson / David Conway
2. Communication Skills in the BDS curriculum

Optimal communication skills are seen to one of the key graduate attributes of a newly qualified dentist. Communication teaching has been greatly enhanced and developed in the 2004 BDS curriculum. Students have input in Years 1-4.

In Year 1 students are introduced to the basics of communication skills, including verbal and non-verbal communication, within a dental setting. This experience has been enhanced by the provision of up-to-date teaching materials funded by the Learning Teaching Fund, University of Glasgow. The DVD, developed from research examples in real life, features good and sub-optimal examples of poor communication in a clinical setting. The students evaluated the DVD positively, as shown below and a fuller description of the findings can be found in the final report found at www.gla.ac.uk/media/media_102297_en.doc

‘Showing both positive and negative patient management was helpful to aid my understanding of good, patient-centred behaviour’. (73).

‘Good acting, relevant clinical situations, really emphasised how important good communication is to understanding…’ (91).

In Year 2, students then start to develop their skills during their contact with simulated patients. Using custom built facilities in the Wolfson Medical Building, students interact in the interview rooms with simulated dental patients, while their peers observe and then give feedback on the interaction, in tandem with the tutors and patient. The resultant clips are uploaded onto Moodle and the students write a reflection of their experience. Students learn by observation, feedback and reflection. Evaluation of this by the students shows that they find the experience enhances their learning, and is especially useful in preparing them for their first patient interactions. During the last academic year (08-09), the dental students were joined by the dental hygiene and therapy students during these sessions. This joint working between the two groups of students deepens their understanding of the importance of dental team working.

In Year 3, students are introduced to the concept of communication with visually impaired patients and undergo skills workshops where they have access to a range of simulated visual impairments. This enhances the students’ understanding of the challenges of treating such patients.

In Year 4, during advanced communication skills, the students work with the professional actors once again, with the students participating in forum theatre. Students witness two short plays developed around the themes of ‘patient confidentiality’ and ‘gaining consent’. Students discuss the key issues presented critically, using a problem-solving approach, and then a student volunteer acts the role of the dentist. This approach improves the students learning experience in a novel and innovative way.

Vivian Binnie
3. Self-Directed Polymerase Chain Reaction Session

The self directed PCR session was designed to highlight the importance of molecular biology techniques within the biomedical sciences and clinical practice, and to provide the opportunity for student based analyses. Dr Riggio had previously introduced the concept of DNA as unique building blocks of life, and described PCR as a technique for the rapid amplification of both known and unknown sequences, through didactic teaching in lectures. It was the aim of the session to integrate this knowledge and understanding in order to undertake problem based learning.

The session originated from a laboratory-based practical class, designed to enable the students to undertake molecular biology experiments. However, on reflection it was thought that the students did not entirely benefit from this three hour session, as the analytical aspect was outweighed by the practical aspects. A follow-up tutorial was also included to go through the analyses, but many of the students did not participate. Therefore, the session was changed to self-directed learning, with the tutorial maintained as a debrief session. The students were given the condensed practical manual, but with representative images of the gels that they would have generated in the class. They were then asked to analyse these and decipher which oral pathogens would have been identified using the information available. Further short answer questions were also provided in relation to the principles of the techniques employed. One week later the entire class attended a compulsory tutorial session in the lecture theatre, where I was able to introduce the topic through some didactic teaching, before walking through the analyses and questions interactively.

This self directed learning strategy motivated the students to read the manual opposed to simply turning up to the practical and getting their partner to guide them through the session. Given that the session was self directed, the students were more likely to read and understand the principles previously taught, as these a requisite to answering the questions. Overall this promoted deeper learning, and perhaps an appreciation of how biomedical science benefits clinical practice. The fact that there was staff student interaction in a large group environment demonstrated that participation of session was successful. It is anticipated that this will change further next session to vignettes that encompass molecular diagnostics in relation to blood borne diseases, which is of extreme clinical importance.

Gordon Ramage

This short report of a case study is ‘work in progress’, funded by the LTDF 2009-10.

Peer-assisted teaching is implemented in many courses at both undergraduate and postgraduate level within medical teaching. This study is novel from two perspectives: students are teaching two clinical skills and peer-assisted learning has not been reported previously within dental teaching. The two skills are taking impressions and tooth preparation for intracoronar restorations. The second task is scheduled for February 2010.

A randomised group trial split four groups \((n=24)\) of BDS 1 students into two teaching sessions led by either staff or BDS5 students. The nature of the study was explained to BDS 1students at a lecture. An information sheet was given to each student as well as the opportunity to ask questions before consenting to participate.

Following a call for participants posted on the Dental School virtual learning environment eleven peer-trainers volunteered. The peer trainers were prepared for their teaching sessions with an overview of teaching practice from a member of the University Learning and Teaching Centre and a meeting with staff to discuss teaching for the tasks.

Data collection using quantitative and qualitative methods is being used in the form of questionnaires and focus group meetings.

The first task of taking impressions has been completed (November 2009) with questionnaires received from 87 of 92 (94.5%) Year 1 students.

A positive response from both the trainees for both staff and peer-trainers was received:

Tutor was informative and funny. Passed on tips to help and was observing problems well and giving running commentary on what was happening or going wrong. Gave opportunity to ask questions. (Staff-led group)

The students were really friendly and approachable allowing me to feel confident while taking the impressions and also having my own impressions taken. (Peer-led group)

Comments on the experience of being taught by a student also provided very positive responses:

I thoroughly enjoyed being taught by the students, it was a nice change from staff members and less intimidating as well.

Encouraging us to ask questions. Made sure we were comfortable. Very friendly and helpful. Very clear instructions.

Really enjoyable. I felt very confident with my tutor and could ask them anything. Also very informative.

The focus group meetings have yet to take place but volunteers have been recruited and the meetings scheduled for December 2009. This study is considered important by the authors in terms of fulfilling a number of quality enhancement themes.

Donald Cameron, Andrew Crothers, Andrea Sherriff, Vivian Binnie.
5. Outreach Teaching

As far back as 1977, Holloway and Dixon\(^1\) published a paper on what was then termed ‘extra-mural experience for undergraduate dental students’ acknowledging that clinical experience gained beyond the more sheltered environment of the dental school forms a useful transition between undergraduate training and independent clinical practice. The General Dental Council’s framework for undergraduate dental education, The First Five Years\(^2\), endorses Outreach teaching as an example of good practice in undergraduate training, stating that the extended clinical environment experienced can potentially broaden the base of available clinical material and enhance the educational experience.

One of the major innovations of the 2004 BDS Curriculum at Glasgow Dental School was the introduction of an extended Outreach Programme, principally in Adult Primary Care, which sees students spending half of their final undergraduate academic year in a variety of new and refurbished Health Centre settings in NHS Greater Glasgow and Clyde, Ayrshire and Arran, Forth Valley and Dumfries and Galloway. As the programme expands, Outreach centres in NHS Lanarkshire, Highland and further centres in Greater Glasgow and Clyde will supplement existing provision. This is a partnership initiative between NHS Education for Scotland, the Scottish University Dental Schools and participating NHS Boards which originates from the Government Dental Action Plan. There are benefits for all stakeholders, not just in relation to student education, but also for example, in research potential, provision of patient access to dental care, and dental service provision in remote and rural areas of Scotland. In total, together with earlier Outreach experience in Dental Public Health in the community linked to the national ‘Childsmile’ Preventive Programme, Paediatric and Special Care Dentistry, dental students at Glasgow receive over 20 academic weeks throughout their five year training in community settings. This level of experience compares highly favourably with other UK Universities, exceeding most.

Apart from the obvious benefits of experiencing practising in a real-life primary care environment with dedicated nursing support where other medical disciplines may also contribute to holistic patient care, students attending Outreach from Glasgow Dental School benefit from working in modern surgeries equipped to a high specification with the latest technology, including computerised patient management systems and digital radiography, which enhance their educational experience.

Because of the multi-sectoral involvement in these recent developments, the processes involved in quality assurance and quality enhancement have been closely scrutinised and monitored. Watson, Bissell and Gerrish (2007)\(^3\) observe that Outreach schemes must be integrated into the school’s quality assurance policy, of which participating teachers should be cognizant. In fact the concept of a ‘hub and spoke’ training environment where the satellite clinics are clinically governed by the host NHS Board and educationally governed centrally by the academic institution has demonstrated highly encouraging feedback at this early stage, from students, their patients and from tutor staff\(^4,5\). Congruence in teaching and assessment protocols employed, attention to pastoral care of students and educational training and support opportunities for tutor staff, including further degree programmes have led to consistent teaching for the students no matter where they are allocated. Resultantly, a relatively seamless transition from dental school to practice environment has followed, where educational standards for our undergraduates are maintained and subsidiary vocational skills are acquired.

Two excerpts of student feedback from this year’s SDPBRN Survey conclude the report\(^5\):

‘The clinical experience this year… is invaluable. Although I am very aware that I still have a long way to go, the improvement I feel I have made in terms of treatment, knowledge, theory and confidence is immeasurable. I can only attribute this to the experience of Outreach.’
‘Highlight of the BDS Curriculum; very efficient environment to learn in.’

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*Scottish Dental Practice Based Research Network* 2009

David Watson
6. Donut Round Seminars

A Donut Round Seminar is a method for helping students to learn the basic facts that they need before they can start more complex tasks such as problem solving or clinical skills. It is also very effective as a revision tool. We have been using Donut rounds for seminars of 30-45 minutes duration in BDS4 and BDS5 since 2004. They should be run regularly (1-2 weekly) so that everyone gets into the habit of working in a team.

The ideal number of students for a Donut Round is between 5 and 9 students. The teacher is a facilitator not a teacher. The material is normally between 3,000 and 5,000 words and can be 2-3 scientific articles although a chapter from a book can work well. It should not rely on visual material, and is best if it is a review article or summary of the subject. It should be clearly written and contain all the facts needed by the students. Each student is instructed to write down 10 questions (that can be answered in 1-2 mins), that they will use to test their colleagues’ understanding of the material that they have been given to read.

It is not uncommon at the first Donut Round for one of the students to have failed to prepare the work, especially if they are not used to taking responsibility for their own learning. The other students will make their disapproval of this person’s behaviour very clear. It is unusual for you the facilitator to have to say anything.

One member of the group is chosen to lead. They pick someone else in the group to whom they direct their first question. The decision as to whether the question is fair (the answer is contained in the material) and whether the answer is right, rests with the group and can start a lively discussion. The person who answered the first question now chooses a question from their list and directs it to another person. Avoid people returning questions to the person who chose them as otherwise two individuals could dominate a session.

The role of the facilitator is to keep quiet and to speak only when the group directly asks them for help or advice. They may also wish to break in if they feel that the rest of the group is ignoring one of the members or to open out certain areas into a discussion which can make the Donut Round more interesting. The facilitator should also note down where the course material is thought to be inadequate, wrong, or excessive. They can then arrange for the material to be edited. The facilitator should only speak when specifically asked to as otherwise there is a danger of a Donut Round turning into a mini lecture.

Over a period of time the group develops a dynamic. One thing that becomes noticeable at an early stage is that certain individuals know the material better than others. The group notices this too, and tends to direct their most difficult questions towards those individuals. Other individuals may be struggling for one reason or another. Again the group will notice this and save their easiest questions for them. As a facilitator you can monitor the quality of each student both by the kind of questions they write, the difficulty of the questions that are directed towards them, as well as their ability to answer those questions.

Richard Welbury