ADEE School visitation report
17-20 February 2018
Al Jouf, Saudi Arabia

Dental School information:

Al Jouf University
College of Dentistry
Sakaka 72388
طريق المطار
Saudi Arabia

Tel: 014 624 7493
http://www.ju.edu.sa/

Dean:

Dr Bader Al-Zarea (Dean, Associate Professor, Removable Prosthodontics)

Visit Co-ordinator:

Dr Mahmoud Salloum (Associate Professor, Removable Prosthodontics & Head of QA)

Visitation Panel:

Professor Deborah White
University of Birmingham, UK

Dr James Field
University of Sheffield, UK

Professor Christina Lindh
Malmö University, Sweden

Dr Barry Quinn
Kings College London, UK

Contents

Acknowledgements

The visitation team would like to thank Al Jouf University and in particular the College of Dentistry, for hosting an ADEE site visit. We appreciate the time and effort that has been spent by staff in preparing for the visit and in completing the self-evaluation document. We would particularly like to commend the School for their openness and honesty in the document, but especially during the visit which helped us enormously, giving us a true insight into the undergraduate teaching programme, within the national and cultural context.

Particular thanks are offered to the visit co-ordinator, Dr Mahmoud Salloum, and the Dental College Dean, Dr Bader Al-Zarea.

The team also wish to express their gratitude for the extremely warm welcome and hospitality which they received during their visit.

Prologue

The process of preparation for an ADEE visitation and for the production of a self-assessment report is the most important part of an ADEE visit. The more faculty that contribute to the process, the greater the validity of the visit. The periodically repeated exercise of a self-assessment by a school enables the school to advance forward with dental education.

The observations of the ADEE team of visitors are given by four individual dental educators working as a team in order to give perspectives from different countries, and different academic and professional backgrounds. The nature of the ADEE visit is a peer review and its main focus is to give professional feed-back to the school.

ADEE aims to advance dental education in Europe through convergence towards higher standards. This is achieved through peer influence and the exchange of ideas and best practices. All the visitors have taken into consideration the ADEE curriculum documents "The Graduating European Dentist" (Field, 2017). The College of Dentistry in the University of Al Jouf is to be commended on its leadership and the openness and honest of its hardworking staff. The visiting team was impressed by the commitment of staff, at all levels, to the Dental School and the undergraduate students. It is the opinion of the visitation team that the School shows many commendable attributes. There are also several areas within which ADEE would recommend development in order to drive forwards the quality of dental education that is provided, and to allow Al Jouf to compete as one of the best dental schools in the Kingdom of Saudi Arabia.

The team's comments are offered to the school for their consideration and debate. They have purposely avoided detail and minimized comments on individual departments, and that relate to individual staff, in order to avoid unhelpful comparisons. The team recognise that there are a number of potential resources within Europe and the wider world that may support improvements and new initiatives, and ADEE is happy to facilitate access to these. On behalf of ADEE, we hope that you have found the process useful.

Introduction and general remarks

Al Jouf College of Dentistry is a relatively young school (est. 2007), receiving its first cohort of students in 2010. It is the first and only dental college in the North of Saudi Arabia. In 2016, the college took in 31 male and 16 female students. The school is well-resourced and enjoys a vibrant and diverse cohort of faculty staff and students. Students study for 6 years; a 5-year core course that is followed by an internship year. The college is proud of the education that it provides and the quality of its graduates. Its teaching quality is ranked in first place within the wider University. However, the school is keen to improve and to map its practice to modern standards. The college will migrate to a new campus and newly-built premises in 2019, and this provides a fantastic opportunity to further drive forwards the quality of dental education that is delivered within the Al Jouf region.

School Values

- Leadership
- Community service
- Innovation
- Excellence
- Professionalism
- Integrity

Staff representation during the visit

Day 1 – Introductory discussions

Dr Bader Al-Zarea (Dean, Associate Professor, Removable Prosthodontics)
Dr Muhammad Nadeem Baig (Assistant Professor in Preventive Dentistry, Director of Clinics)
Dr Ahmed Shawkat (Assistant Professor, Periodontics & Vice-Director of Clinics)
Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)
Dr Mohamed Ghazi Sghaireen (Associate Professor, Prosthodontics, Head of Department)
Dr Abdel Wahab Al-Zwiri (Associate Professor, Head of Preventive Dentistry)
Dr Azhar Iqbal (Assistant Professor, Operative Dentistry, Head of Conservative Dentistry)
Dr Ibadullah Kundi (Assistant Professor, Orthodontics)
Dr Santosh Patil (Assistant Professor, Oral and Maxillofacial Radiology)

Day 2 – Curriculum

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)
Dr Mohamed Ghazi Sghaireen (Associate Professor, Prosthodontics, Head of Department)
Dr Abdel Wahab Al-Zwiri (Associate Professor, Head of Preventive Dentistry)
Dr Azhar Iqbal (Assistant Professor, Operative Dentistry, Head of Conservative Dentistry)
Dr Ibadullah Kundi (Assistant Professor, Orthodontics)
Dr Santosh Patil (Assistant Professor, Oral and Maxillofacial Radiology)

Day 2 – Biological and Medical Sciences

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Krishna Rao (Assistant Professor, Oral Biology & Head of e-Learning)

Dr Kiran Ganji (Assistant Professor, Periodontology)

Day 2 – Dental Public Health and Behavioural Sciences

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Naighat Zia (Lecturer, Community Dentistry)

Dr Sudhakkar Vindavalli (Lecturer, Community Dentistry)

Day 2 – Restorative disciplines

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Mohamed Ghazi Sghaireen (Associate Professor, Prosthodontics, Head of Department)

Dr Azhar Iqbal (Assistant Professor, Operative Dentistry, Head of Conservative Dentistry)

Dr Jothish Ravi (Assistant Professor, Endodontics)

Day 3 – Orthodontics and Paediatrics

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Ibadullah Kundi (Assistant Professor, Orthodontics)

Dr Mohamed Alam (Associate Professor, Orthodontics)

Dr Ravi Gudipaneni (Assistant Professor, Paediatric Dentistry)

Day 3 – Oral diseases of bone and soft tissues

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Kiran Ganji (Assistant Professor, Periodontology)

Dr Santosh Patil (Assistant Professor, Oral and Maxillofacial Radiology)

Dr Ibrahim Alzoubi (Assistant Professor, Periodontology)

Day 3 – Scientific education and development

Dr Mahmoud Salloum (Associate Professor, Removable Prosthodontics & Head of QA)

Dr Abdel Wahab Al-Zwiri (Associate Professor, Head of Preventive Dentistry)

Dr Sudhakkar Vindavalli (Lecturer, Community Dentistry)

Dr Rakhi Issrani (Lecturer, Oral Medicine)

Day 3 – Integrated Dental Care

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Mohamed Ghazi Sghaireen (Associate Professor, Prosthodontics, Head of Department)

Dr Abdel Wahab Al-Zwiri (Associate Professor, Head of Preventive Dentistry)

Day 3 – School research, publications and quality assurance

Dr Mahmoud Salloum (Assistant Professor, Removable Prosthodontics & Head of QA)

Dr Mohamed Alam (Associate Professor, Orthodontics)

Dr Santosh Patil (Assistant Professor, Oral and Maxillofacial Radiology)

Dr Ahmed Nagy (Lecturer, Oral Surgery)

School facilities

Physical and clinical facilities

The school is currently based in a dedicated building, with the medical school adjacent, towards the North of the Sakaka district. The school is easily identifiable within the community, with adequate transportation links and parking. The building is light and spacious, with clearly defined areas for dedicated academic and clinical learning. A large central lecture theatre with audio visual capabilities is available on the first floor.

Pre-clinical skills learning environments (x2) are equipped with A-dec simulator units and one demonstration unit per room. At present, the demonstration unit is not equipped with a video-link and monitors, and so students are required to gather around in order to see operative techniques being demonstrated. A computer is not present, and so it is also not possible to concurrently deliver any educational elements within the skills lab.

Current clinical treatment facilities are spacious with good quality dental units and chairs. Students are able to access an appropriate range of materials and equipment, and receive appropriate nursing support. When patients fail to attend, students are encouraged to assist one another. Radiography facilities are in close approximation to the clinical areas, although presently there are no digital facilities or lightboxes within each treatment unit – this means that students are unable to view patient radiographs simultaneously with clinical examination. Radiography chairs do not currently allow positioning of the patient's head effectively, and there is no visible guidance within the rooms about exposure parameters, nor regarding the application of paralleling techniques using film holders (which is recommended).

In 2019 the college intends to move to a new-build site within Al Jouf University main campus, which is around 30Km South-West of the current location. Male and Female students will be educated within the same building. The new facilities are planned to accommodate up to 100 undergraduate students per year (50 male, 50 female) and will be supported by around 230 dental chairs (some of which will also be utilised for postgraduates and staff). For pre-clinical training, the new facilities will consist of 100 new A-dec phantom head units and a dedicated video-linked demonstration unit, 100 spaces within a prosthodontic laboratory and a dedicated paediatric clinic. A student technical production laboratory is also planned, along with a dedicated anatomy laboratory. The new facilities are planned to facilitate the provision of general anaesthetics and sedation services, and planned theatres will be designed with one-way glass and viewing galleries to allow shadowing by students.

Clinical support and maintenance of facilities

Technicians and dental nurses are not trained at the college, and must be suitably qualified prior to appointment. For nurses, the minimum requirement is a Bachelor's degree in Nursing. The college will then train nursing staff in line with local dental protocols and policies.

Maintenance programmes are currently in place for machinery and equipment. A local team of technicians are also employed in order to deal with day-to-day maintenance issues. At present there are no clear contingency plans for clinical teaching, should the facilities suffer longer-term problems or total failure. In the new campus, numbers will apparently be increased in a staged approach, and so this may be less of a

problem in the short-to-medium term. Current 5-year plans include an annual review of equipment and facility requirements, and this is commended.

Teaching and Learning facilities

A large proportion of teaching is delivered in dedicated classrooms for each year group. A significant amount of resource is also made available through the school's online learning environment, BlackBoard®. Students have access to this, and e-texts, remotely, whilst off campus. The University does not provide remote access to computer applications such as Microsoft Office in order for students to work from home, but students are encouraged to use the extensive computer facilities available within the college. The facilities in the new campus will be significantly larger and cater for a range of learning styles and needs.

Library facilities and texts

The library facilities in the current building are spacious and comfortable. There are facilities to access e-texts and to issue and return books through self-service desks. A digital document scanner is also available. There are a number of hard copies of dental texts, although, in addition to the e-books, these represent only a small proportion of the texts which would be considered essential to delivery of a comprehensive dental curriculum. The college has already identified a weakness in this area and the visitation team are happy to provide advice about suitable discipline-based texts.

The library within the general campus is also spacious and comfortable, with similar facilities to the current college library. There are also seminar rooms on the second floor that students can use for small group work or revision. Once housed in the new buildings, this library is likely to be utilised much more heavily by the dental students.

Research facilities

A small research laboratory has been established, but the wider University provides a central resource for research laboratory space and equipment. These resources are primarily used by staff. The new campus buildings will bring the college and the central resources closer together, and this will hopefully facilitate access.

Patient-base

The college serves patients primarily from Sakaka but also, from the wider Al Jouf region. The vast majority of patients are self-referred; whilst some patients are referred from government dental centres, these are largely treated by staff due to complex treatment needs.

Patients are screened initially to estimate treatment need, prior to allocation to clinical mentors. In turn, patients are allocated to specific students based on their academic needs. The majority of patients attend with specific dental complaints; only a small proportion of screenings result in only maintenance and review phases of treatment. Patients requiring special care are only treated by college staff, although on occasions, students are able to observe this care. Some waiting lists exist for patient care, depending on the specialty in question.

Whilst attendance is anecdotally good, the college does not formally report the patient DNA (does not attend) rate. Some patients are on standby to fill last-minute gaps. The school tries to improve the contact with potential patients through the existing Outreach programme. The patient demographic is, at present, largely Saudi, although the students will treat patients from other nationalities.

Once immediate patient care and initial review are complete, patients are regularly discharged. If patients were routinely retained for review, there may be more opportunity to demonstrate continuous patient care throughout the remainder of the students' programme.

Multi-professional training

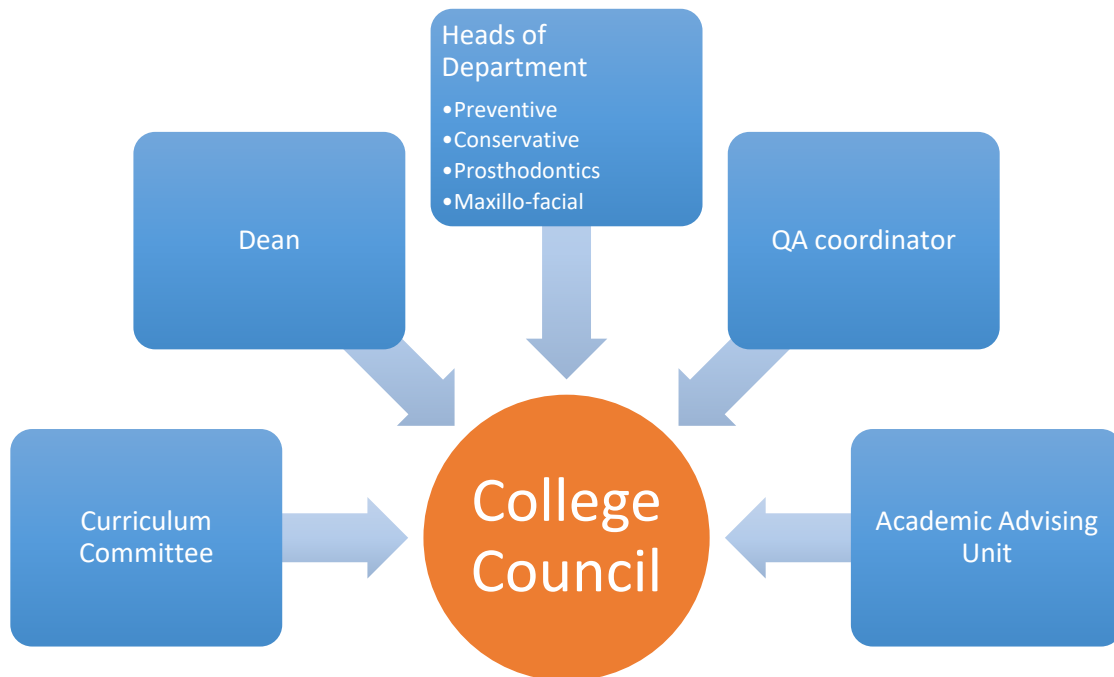It was reported that there is a low local demand for Dental Hygienists. As such, the college does not currently offer hygienist training. However, there are chairs within the college in Al Jouf that are dedicated for hygienist use. It would be useful for the school to consider how they might mediate shared care, on occasions, in order to develop the concept of team working and scope of practice.

Organisational structure

Organisation

The College Advisory Council oversees the strategic operations of the Dental College. The Deanship of Educational Affairs within the University, approves the composition of the Council. The College Council meets around 5 times per semester. It is supported by 9 administrative staff. The diagram below outlines the administrations (including some, but not exhaustively, the sub-committees) that contribute to the strategic operation of College Council.

```
                    Heads of
                    Department
                    •Preventive
                    •Conservative
                    •Prosthodontics
                    •Maxillo-facial
   Dean                                    QA coordinator


                    College
Curriculum          Council             Academic Advising
Committee                                      Unit
```

Curriculum Committee

The Curriculum Committee has an extensive remit. The team were happy that this was manageable, meeting around 5 times per semester. There are plans to meet virtually in the future to avoid the resource implications of drawing the full committee together on each occasion, and this is commended – although at present, the student voice is currently missing from this strategic committee structure.

Staff

At the time of the visit, the academic staff comprised:

- 1 Professor (female)
- 5 Associate Professors (all male)
- 15 Assistant Professors (13 male, 2 female)
- 23 Lecturers (14 male, 9 female)

Recruitment and retention

The college recognises that they have difficulties in recruiting suitable staff, that satisfy both the needs of the undergraduate programme and the research output requirements of the University. In particular, it is difficult to attract PhD holders, and the short 1-year contract may compound this problem. In an attempt to remedy this, the college offers extra salary contribution to particular staff in order to match their country of graduation. 15 or more new staff are planned for the coming year.

CPD, Staff training and development planning

Staff are encouraged to attend conferences, and are afforded up to 6 funded days per year to do so. Locally, opportunities for regular development are offered at college, faculty and University-level. Local events comprise 2-weekly seminars on dental topics. Staff are required to complete an annual plan; this plan contributes to the staff academic file, which is used as a combined 'professional development plan and appraisal document'. The staff discuss and peer review one another's practice whilst in lectures and the clinical environment, particular in relation to junior colleagues. There is no opportunity for more-formal peer-observation of clinical teaching, although this is something that could be introduced.

Progression and professional standards

Staff generally seemed happy that the University published clear criteria for promotion, although there is currently no opportunity for promotion based on teaching and scholarship alone. At present, a requirement for the appointment of staff at Associate Professor or higher, is having obtained a Master's degree in Education; this is commended.

The staff are aware of national teaching standards published by the NCAAA (National Centre for Academic Accreditation and Assessment) in Saudi Arabia but were unaware of more ubiquitous higher education frameworks, such as the Higher Education Academy UK Professional Standards Framework (https://www.heacademy.ac.uk/ukpsf).

General Curricular approach and student selection

The programme is structured around the 5 domains of the NCAAA (National Centre for Academic Accreditation and Assessment):

1. Learning concepts, principles and basic theories of the dental field, which coincide with Islamic values
2. Application of the dental conceptual perception and critical thinking skills, that facilitate problem solving and decision-making
3. Learning the basics and values of teamwork environment, issues of ethics, personal and social responsibilities
4. Learning the essential knowledge and skills of the information technology, basic quantitative skills, as well as, efficient written and oral communications used in the dental fields
5. Enhancing the ability and competency of essential motor skills, that are required for different dental techniques

These domains are fixed and, in turn, give rise directly to the goals of the BDS programme at Al Jouf. The 5 goals are then subdivided into Programme Objectives, and finally, 12 Learning Outcomes. The topics these cover are summarised below:

1. Basic oral and biomedical sciences
2. Clinical techniques and procedures
3. Diagnoses and management
4. Structure and function of the oral environment
5. Behavioural sciences and principles of communication
6. Law and ethics
7. Problem solving and critical thinking
8. Leadership and teamwork
9. Personal and social responsibility
10. Good dental practice and effective communication
11. Information technology tools and numerical skills
12. Manual dexterity and control, and continued development

The college has adopted a Problem-Based Learning approach, employing a significant number of student-mediated case-based discussions and quizzes. Discussions routinely involve students from each of the clinical years, which will undoubtedly help with vertical integration. This is commended, and students spoke very positively of this approach.

The core of the programme is spread over 5 years of study, which is followed by an Internship year. Entry to the programme is dependent on performance during a foundation year, described below:

Foundation year

This year is administered by the central University, and it is common to all biomedical students, regardless of final chosen discipline. Despite this, the college is able to influence the content. Typical topics include:

- English language
- Computer skills
- Maths, Physics, Biochemistry and Biology
- Ethics
- Professional education and communication skills
- Thinking skills and learning styles

Students achieving a grade point average (GPA) of >4.5 are able to apply to study Dentistry. The college is then able to select the top potential candidates. The College Council approves the exact number of students each year. The college does allow applications from students completing their preparatory year in other Universities within Saudi Arabia.

Internship year

The 6th and final year, the internship, results in the award of BDS, upon satisfactory completion. This year comprises 8 months of clinical practice within the college, with only minor supervision. A further 2 months is spent observing in a national maxillo-facial centre, and the remaining 2 months is spent practising within a local primary care centre. Whilst in the primary care centres, the students are exposed to the treatment needs of the local population, which can be quite different from the demographic within the college. The students are also required to publish one piece of research (as described earlier) and are also required to attend scientific seminars and present cases.

Term/Semester structure and hours of study

The college operates on a semester basis, with 2 semesters each year, both 16 weeks-long. The college have provided summaries of 'credit hours' which are allocated amounts of actual 'contact hours' depending on the specific activity. Whilst this can be useful in order to categorise activity, at present it somewhat misrepresents the actual hours of study. The panel is concerned that the summary tables therefore currently under-represent the amount of study required by the students, and resource required by the college. Our current best estimate, with agreement from the relevant staff, is that the college identifies around 1700 contact hours of clinical study across years 3-5. However, this does not account for didactic non-clinical sessions, or self-study. Self-study is particularly under-represented within the documentation – and the panel believes that total study hours probably exceeds 5000 hours across the programme. It would be helpful to review the programme carefully and provide a breakdown, for each element of the course, of *actual* contact hours and anticipated self-study hours, in total. Self-study hours should at least equal the non-clinical didactic hours total.

General assessment strategy

The college employs a range of formative and summative assessment methods including:

- Written exams – SSQ and MCQ questions
- OSPE and OSCE exams
- Operative practical tests both within the skills lab and the clinical environment
- Self-assessment (critical appraisal)

Pass marks for examinations are set nationally, at 60%. It would be useful to have more flexibility in setting pass marks for individual student cohorts and assessment components of the programme, instead of using an arbitrary value. This can account for question difficulty, complexity and the requirement of the programme. Written exams are blueprinted in order to show how Learning Outcomes (LOs) are covered. This is commended. The block organiser is able to weight sections of the paper based on the importance of the LOs. The Examinations Unit administers the written examinations and will raise any issues relating to Quality Assurance and response anomalies.

Curriculum – Professionalism and Progression

Professionalism

Whilst the school values the attribute of Professionalism, this is not currently formally assessed within the curriculum, either in written form, or within the skills or the clinical environment.

Student progression

At present a rigid rubric is used to determine student progression. A relatively large proportion (over 40%) of students fail to complete the course for various reasons, including difficulties with the English language, stress and transferring to other programmes.

Student progression is based on meeting minimum requirements. If students fail more than two blocks, then they will be given the opportunity to repeat the year. Progression and appeals are mediated initially by the college (the Dean and the Examinations Committee, and the college council), and ultimately the University. The Dean is proactive in working with the examinations committee to identify examination anomalies and to carry out basic retrospective psychometric analysis on the questions that have been set.

Curriculum – Safe & Effective Clinical Practice

Scientific knowledge that underpins patient care

The panel felt that the current programme covering scientific knowledge that underpins patient care is generally comprehensive.

Oral Biology and Medicine relating to Dentistry is administered by enthusiastic block leaders. The Oral Biology material includes growth and development of dental tissues, histology, psychosocial and cognitive science and tooth morphology. The Medicine relating to Dentistry material includes basic aspects of cellular systems, anatomy, physiology, and biochemistry. A systems-level approach is adopted for teaching this material – the impact of medical conditions on dentistry are taught in the second year, but the panel feel that this could be introduced more longitudinally, and perhaps utilising a greater input from medical clinicians. The move to a central campus may provide an opportunity to do this. A range of teaching methods are employed, including the use of digital resources; in particular, the histological online resources are excellent and the college should be commended on this. Reportedly, the medics enjoy teaching dental students although ensuring that discipline-specific and relevant content is delivered can be a challenge. The teachers maintain a continual local dialogue with block leaders in order to facilitate this process and ensure relevance of their material.

Behavioural Science is delivered in tandem with Dental Public Health. Whilst the latter exists as a fairly comprehensive programme, elements that directly relate to behaviour change are limited to course 431 (Child and Adolescent Care) – the panel felt that there was little recognised opportunity for teaching and assessing behaviour change at an individual patient level. After consulting study documentation, staff and students, it was the opinion of the panel that the curriculum focuses on *treating* dental disease to a much greater degree than the *preventive* elements.

The scientific base relating to radiology, pathology, hard and soft tissue disease, and pharmacology are introduced in the second year (Course 214) and then further integrated in Course 414. Periodontal aspects, in particular, are introduced from the first year and then taught longitudinally throughout the programme in increasing complexity.

The panel is satisfied with the paediatric and orthodontic curriculum relating to the scientific knowledge underpinning patient care.

Block organisers meet regularly with Heads of Department to ensure that programmes meet the LOs of the curriculum.

Gatekeeping patient care – Pre-clinical skills

A well-defined pre-clinical operative skills programme currently exists. This covers the following skills, carried out within the simulator units and technical teaching laboratories:

- Operative
    - Instrument use
    - Cavity preparation (Black's cavities I-V)
    - Direct plastic restorations (amalgam and composite)
    - Periodontal instrumentation
    - Indirect preparations (veneers, crowns, partial coverage)
    - Provisionalisation
- Removable Prosthetics
    - Denture design
    - Technical stages of denture construction
- Paediatrics and Orthodontics
    - Direct and indirect restoration of primary molar teeth
    - Technical stages of removable & functional orthodontic appliance construction
    - Cephalometric tracings
    - Cast and arch discrepancy analysis
- Medical practice
    - Managing medical emergencies
    - Basic Life Support (BLS)
    - Cardio-pulmonary Resuscitation (CPR)

In relation to radiology training, it is concerning that students are training by taking radiographs on each other, which cannot be justified. No phantom heads are available for practising radiographs, although this will be addressed in the new campus.

The management of medical emergencies and BLS are taught within Course 224 prior to students treating patient within the clinical environment. Students must demonstrate adequate management of medical emergencies in their internship year in order to receive 2-year certification.

Students are routinely encouraged to critically appraise their own work for summative assessments, during the operative parts of the skills programme. This practice is commended, although it is not currently a requirement within the paediatric and orthodontics skills programme.

Entry onto the clinics is dependent on the students satisfactorily completing a log book for operative dental skills, and a summative series of 4 exams (theoretical and practical) throughout the second year. The course covers the following techniques, largely carried out on Frasaco® typodont teeth (a few techniques towards the end of the course are carried out on natural teeth):

- Class I Preparations (x2)
- Class I Amalgam restorations (x2)
- Class II Preparations (x4)
- Class II Amalgam restorations (x4)
- Class III Preparation (x1)
- Class III Composite restoration (x2)
- Class IV Composite restorations (x1)
- Class V Preparation (x1)
- Class V Amalgam restoration (x1)
- Class V Composite restoration (x1)
- Liner and base application

This range of techniques would be considered to be somewhat dated – and we would recommend teaching and assessing a range of pre-published pre-clinical skills (operative and core) in order to ensure patient safety (https://www.ncbi.nlm.nih.gov/pubmed/28636116).

Assessment criteria are largely derived from partner institutions, and would perhaps benefit from some refinement. They are, however, clear to both staff and students, and this is commended. Practical work is also blinded to the examiners, and new student codes are issued each year. It is of concern, however, that the grading system relating to the criteria is not clear, and what students are required to achieve in order to progress – further, there needs to be more clarity about where the minimum standard lies for students who are repeatedly failing assessments – and how these students are managed.

At present, clear lesson plans for the pre-clinical skills environment do not exist – and this is important during this particular formative stage of student development. In relation to this, an important part of safe and effective patient care, is the ability to accurately reflect on performance. This skill is currently under-developed within the curriculum. Critical appraisal *is* encouraged, but peer-review is not yet practiced. The pre-clinical environment provides significant opportunity to nurture these skills, and if these occurred regularly and longitudinally, it would help the students to assess their strengths and weaknesses on a regular basis – and in turn, to identify and particular learning needs when moving into the clinical environment and beyond.

General clinical care
The course provides the opportunity to develop critical components of integrated dental care (i.e. record keeping, diagnostics, treatment planning, delivery of clinical care, cross-infection control, follow-up and

maintenance). The panel feel that in order for students to reflect adequately on the care that they provide, there needs to be a more comprehensive recording and communicating of clinical and patient information, and a more methodical and staged approach to student supervision and the delivery of care. Critical stages and procedures must be reinforced at all times, often in a seemingly rote fashion, when students (especially as they first enter the clinical environment) are treating patients.

The panel was impressed with the concept of a treatment planning committee which runs twice a week for 3 hours, in order to discuss individual cases with students, and plan patient care effectively.

Developing advanced operative skills

Skills courses underpin the development of advanced operative skills – these cover restoration form, function and aesthetics. Students maintain log books within the skills environment and they are required to formally self-evaluate their work. There is, however, at present, little opportunity for students to formally reflect on this process – primarily because feedback in the log books is not recorded from supervisors, and in turn, there is no opportunity for students to record their reflections.

Requirements for finals

Operative requirements for students in order to sit final exams, are clearly defined for both adult and paediatric patients. The targets for adult patients would be considered to be relatively low. They are also defined as activity for each semester, rather than existing as a cumulative set of targets. In contrast, the requirement for treatments in paediatric patients would be considered to be comprehensive. However, the requirement is for completion of minimum numbers only rather than sustained performance at a particular level.

The finals examinations currently exist as a series of purely operative skills, with no concurrent written assessment of theoretical elements; this happens earlier in the year. There is also currently no requirement to demonstrate the ability to treatment plan effectively (through unseen cases) or to present a portfolio of continued patient care.

In order to obtain BDS, students must complete the finals examinations described above, and also the internship year in combination with a 6-hour MCQ exam.

Curriculum – Patient-centred Care and Patient involvement

Within the department that oversees Operative Dentistry, adult patients are triaged for students depending on clinical need. Third year students will routinely undertake diagnostics (including radiographs), provide preventive interventions, supportive periodontal therapy and direct restorations. Years 4 and 5 will then also begin to place indirect restorations and removable prostheses, with a continued requirement to non-surgically manage periodontal conditions (as part of the 'Total Patient Care' course). It is within this part of the programme that the college feels that clinical dental care is most integrated, although there is also a recognised opportunity within the outreach programme for care to be integrated.

Shared care is encouraged between the clinical years, and the students are required to present group cases with input from students in each of the clinical years.

Students currently see and treat paediatric patients from the second semester of the fourth year (course 441). Currently there is no dedicated paediatric clinic. Children are seen within the general restorative clinics. There is an initial emphasis on acclimatisation, diagnosis and preventive care. The paediatric patient base is typically difficult to manage with a high prevalence of early childhood caries. Sedation services are available within the staff clinics, and students in their intern year are able to observe this care. Orthodontic patients requiring removable prostheses are able to be treated by the students, although there is a low uptake of this treatment modality, with many patients preferring fixed appliance therapy. The panel felt that there was more opportunity to link the treatment needs of the paediatric patient base, and the local community services delivered in Al Jouf.

Currently patients are not involved with student examinations, or with providing formalised feedback to students. This is a significant opportunity for potential development.

Curriculum – Dentistry in Society and Outreach Programmes

Dental Public Health
Dental Public Health is coordinated by an enthusiastic team of two lecturers in Community Dentistry. It covers a relatively broad range of topics, including:

- health promotion and education within the community
- epidemiology and research methods
- biostatistics
- preventive dentistry

The programme also seeks to reinforce the taught elements of the curriculum with school-based programmes within the community, and this is commended. This is not the same as the outreach programme, but complements the process.

Outreach
The students enter the outreach programme in the third year onwards. This therefore applies to all students within clinical years of study. Outreach attendance is certificated and is required by the Saudi Board. Outreach comprises a small team approach (students and academic staff) using 2 mobile dental units. Students are attend by rotation, and each team includes students from years 3, 4 and 5. This is commended. The outreach team deliver simple procedures and preventive measures.

Curriculum – Research, Electives and wider engagement

Research elements
Students are required to engage with research through the demonstration and mediation of presentations and the development of these skills across the 5 years.

In the second year, (Course 222) there is a formal introduction to research ethics and research methodology. Data analysis is covered comprehensively over 5-6 hours (Course 333), and the application

of these skills are assessed formatively during that element of the course based on worked examples. Areas relating to data control and information governance are not explicitly taught. Students are split each year into research groups (comprising students from years 3, 4 and 5, and a research supervisor). Student project results are written up as posters and the school chooses the best examples. These best examples are presented at the student conference, held at the end of the final year.

Evidence-based dentistry and critical appraisal are covered briefly within the lecture programme, although at present these skills are not reinforced longitudinally, for example through engagement with journal clubs.

Elective placements

Students are required, by the college, to attend 12 credit-hours of elective courses between their second and fifth year. There are up to 27 topics available (subject to availability and demand), each attributed one or two credit hours (3-6 contact hours). The panel feel that this is a very worthwhile initiative although some of the elective topics seem very important to the whole student body (for example, Community Communication, DENT126).

Opportunities for engagement

The University holds a local research conference each year for students, and the college holds its own research conference biennially which includes invited external speakers. Students in their internship year are encouraged to present their work. The students must show one publication in order to complete the internship year. The University publishes its own journal, and so this significantly facilitates the process. A smaller number of project outputs are published within the mainstream literature sources. Opportunities may exist for students to present their research findings to a wider audience – for example at IADR (International Association for Dental Research), ADEE or EDSA (European Dental Students' Association) conferences or at more subject related international conferences.

Student affairs and the Student Voice

Student affairs are managed through both the Student Activity Committee (SAC) and the Academic Advising Unit (AAU).

The AAU collects and acts on information on student issues, collected and reported by 'block organisers'. This data includes number of patients seen and the treatment provided by each student, as well as their academic performance and attendance. The SAC coordinates external engagements with the local community.

Student attendance is recorded using an RF-controlled tag system mounted at the college entrance and in required areas of attendance, and this is mediated through the student ID cards. A dedicated member of staff manages the system, and interprets and summarises the data for use within the wider college.

The student voice

Currently student opinion on academic elements of the programme is sought through course questionnaires, which are part of the formal University, and NCAAA quality assurance processes. Representatives from the student council are also invited to attend departmental meetings. It would be useful for the college to consider holding a number of meetings between staff and students to consider all aspects of the programme. It would be particularly pleasing if these once in a while were chaired by the students themselves.

Student council – each year the student body votes representatives on Student Council (Years 1-5). The student council acts as a link between the students and staff members, and raising discussion around various aspects of the curriculum. Representatives are also required to communicate effectively with the wider year group and attend monthly meetings with school staff. The student council representatives were able to show examples of both positive and negative issues that were raised with the college.

Student thoughts:

- The students felt that their workload was particularly high, causing some stress throughout the programme. Whilst they enjoy and see value in a problem-based learning (PBL) approach, the male and female students recognise that it is difficult to fit self-study into the timetable, especially in the early years, before they improve their search strategies and study skills. It was considered however to be of considerable value by both the female and the male students.
- The students praised the online resources and enjoyed the fact that they could be accessed from their homes.
- The students felt that they would like a monthly round table discussion with the staff to discuss any issues. The male students were more hesitant but the female students were very positive about wanting to chair such meetings.
- The students praised the openness and accessibility to the Dean, Dr Bader, by email - and felt that this was a very positive initiative.
- The students were keen to have an earlier introduction to clinics, by way of at least shadowing some treatment clinics.

- The female students felt it would be much better if they had access to sports – at present they do not have access to sporting facilities at the college.
- Students, interns or demonstrators had no concept of critical reflection, or its usefulness in continued professional development.

Pastoral support

The students do not have a named personal tutor, although there is a named academic advisor who would consider both personal and academic issues. Female students are allocated a female academic advisor. The Dean also invites students to discuss any personal matters directly with him. Students and academic advisors are asked to meet at least once per month but the meetings are not mandatory.

Social and community activities

Each year the male students gather together for inter-mural sport (football). On a monthly basis, the male and female students organise evening social events. The male students reported limited activities within the wider community, but the female students were reportedly very proactive with this form of engagement.

Teaching quality

Dentistry currently sits in first place for teaching quality within the University of Al Jouf and the staff are keen to maintain the excellent performance of the college.

The NCAAA sets 11 standards for Accreditation in Higher Education within Saudi Arabia. Soon the University will apply for accreditation by NCAAA to allow colleges to self-administer the standards. Staff within the college of Dentistry will be obliged to utilise these standards and to demonstrate a minimum of 3 stars in each.

The panel noted that peer-observation of teaching does not form part of the accreditation process. There is no current opportunity for formal peer-observation of clinical teaching, although this is something that could be introduced.

School research and publications

Al Jouf College of Dentistry has a collection of research 'themes'. These comprise:

- Preventive
- Conservative
- Prosthodontics
- Maxillo-facial

Staff carrying out research must complete University Bioethics training, and register their intentions and research proposal to the local ethics committee, along with a CV; this is based on standardised college templates. Once approved at school level, the successful proposals are considered by the University ethics committee. A research clearance certificate is required in order to apply for funding, and to initiate the research project.

Most of the research is non-invasive, involving retrospective, or case control studies. The research is also carried out in small teams.

Research-informed teaching

Staff were able to give one or two examples of how their research has informed their teaching practice and curriculum content, although this is not a general strategy across the school.

Outputs and impact

All staff above Lecturer level are required to demonstrate successful engagement with research in order to progress to the next salary increment. Staff aim to publish in ISI-based journals. The faculty also has its own journal in which staff projects can likely be published if they are not accepted elsewhere.

Summary

Strengths

- Strong and innovative leadership within the college by the Dean
- Dean involved with wider educational strategy within the University
- Current 5-year plans include equipment and facilities needs
- Enthusiastic students with a keen sense of belonging
- introduction of female cohorts of students
- Enthusiastic and committed staff
- Regular professional development planning for staff
- Introducing the requirements for Associate Professor positions to hold an MEd qualification
- Strong financial support for students
- Outreach opportunities during the internship year
- Students engage with the local community and help to serve the basic dental health needs
- Vertically-integrated PBL
- Good evidence of course guide structure, demonstrating LOs, session outlines and resources
- VLE and e-resources to support learning
- Criteria for skills tests are pre-published to students
- Self-appraisal during some skills sessions
- Students are taught about essential elements of dental educational learning approaches
- A range of elective courses that students can choose to engage with
- Spacious clinical and skills environments

Weaknesses

- Core (generic) clinical skills training before entering the clinical environment
- Limited evidence of reflective practice
- Professionalism is not assessed formally
- Limited evidence of comprehensive patient records
- Student team-working is not formalised within the curriculum
- Operative pre-clinical skills components require review and updating
- Endodontics carried on benches in skills courses
- Limited evidence of follow-up and regular review of patients
- Currently there seems to be more focus on treating disease and less focus on prevention

Opportunities

- New facilities:
    - Closer to central research facilities
    - Increased space and chairs
        - More students
        - More patients for staff
        - Postgraduate training
    - IT infrastructure
        - E-records
        - Chairside computing

- - AV in skills environments
    - The introduction of digitised radiographs
  - GA and sedation
    - Special care
  - Decontamination training
  - Paediatric clinics
  - Proximity to new hospital
    - Medical sciences input
    - Medical emergencies

- Introduction of Postgraduate courses and training
- Formal peer-observation of teaching to develop teaching practice
- Multi-professional training
- Critical reflection using pre-published criteria
- Providing formalised feedback from patients to students.
- Alignment of course guide style
- Portfolio for activity and reflection on significant events
- Develop professionalism grading
- Self-assessment of work within paeds and ortho skills sessions
- Accounting for question difficulty, complexity and the requirement of the programme in exams
- Include the student voice in all aspects of the dental programme
- International conferences (ADEE, IADR, EDSA) for poster presentations
- Increased links with other colleges and universities

Threats
- Investment in new technologies means that staff need to remain up-to-date with their training
- Somewhat dated preparatory techniques and materials in skills courses
- No clear representation of hours of study
- Not enough time formally allocated for self-study within the curriculum
- Nationally-set pass mark (60%)
- Oral health needs of the region's population encourages intervention rather than prevention
- Increased numbers of students
  - Potential difficulties with scaling up any planned teaching improvements in curriculum

Key Recommendations

The panel recommends a number of key positive interventions, derived from the report and the SWOT analysis, above. Whilst this list is not exhaustive, the panel feel that the recommendations below will help to guide the college in the next phase of curricular development – in readiness for entry into the ADEE LEADER programme.

1. Skills courses
   a. Increase the scope and the utility of pre-clinical skills, in order to better-prepare the students for entry onto to the clinics, and delivering safe and effective patient care

b. Widen the remit and assessment of peer-review and critical appraisal
   c. Improve requirements for maintaining accurate and contemporaneous treatment records in preparation for treating patients in the clinics
2. Professionalism and reflective practice
   a. Introduce longitudinal formative and summative feedback opportunities for professionalism attributes and reflective practice – both for treatment episodes and significant events.
3. Team-working
   a. Team-working should be formally embedded and recognised, longitudinally, throughout the programme
4. Programme documentation
   a. Course guides should follow a consistent format
   b. *Actual* contact and self-study hours should be accurately represented within each course guide and for the programme as a whole
5. Examinations and assessments
   a. Formal analysis of written paper complexity using a recognised standard setting method (such as Ebel) in order to better understand candidate and cohort performance – in time, this may also help to demonstrate a minimum standard to the national dental regulator.
6. Student voice
   a. Include the student voice in all aspects of the dental programme, encouraging dental students to chair and coordinate meetings, where appropriate.

ADEE is able to offer guidance in relation to the above key recommendations. In particular, we would reference the "Graduating European Dentist" curriculum documents especially Domain III, relating to individual specialty curricula, the Introductory document with respect to Quality Assurance measures, and the document relating to Contemporaneous Methods of Teaching and Assessment in Dental Education:

- Field JC, Cowpe JG & Walmsley AD (2017) The Graduating European Dentist: A New Undergraduate Curriculum Framework. European Journal of Dental Education, 21(S1), 2-10.
- McLoughlin J, Zijlstra-Shaw S, Davies JR & Field JC (2017) The Graduating European Dentist-Domain I: Professionalism.. Eur J Dent Educ, 21 Suppl 1, 11-13.
- Field JC, DeLap E & Manzanares Cespedes MC (2017) The Graduating European Dentist-Domain II: Safe and Effective Clinical Practice.. Eur J Dent Educ, 21 Suppl 1, 14-17.
- Field JC, Kavadella A, Szep S, Davies JR, DeLap E & Manzanares Cespedes MC (2017) The Graduating European Dentist-Domain III: Patient-Centred Care.. Eur J Dent Educ, 21 Suppl 1, 18-24.
- Gallagher J & Field JC (2017) The Graduating European Dentist-Domain IV: Dentistry in Society.. Eur J Dent Educ, 21 Suppl 1, 25-27.
- Field JC, Walmsley AD, Paganelli C, McLoughlin J, Szep S, Kavadella A, Manzanares Cespedes MC, Davies JR, DeLap E, Levy G, Gallagher J, Roger-Leroi V & Cowpe JG (2017) The Graduating European Dentist: Contemporaneous Methods of Teaching, Learning and Assessment in Dental Undergraduate Education.. Eur J Dent Educ, 21 Suppl 1, 28-35.
- Field JC, Stone S, Orsini C, Hussain A, Vital S, Crothers A & Walmsley D (2017) Curriculum content and assessment of pre-clinical dental skills: a survey of undergraduate dental education in Europe. European Journal of Dental Education.