



**School of Dental Sciences
UNIVERSITI SAINS MALAYSIA**



**SEAADE PEER REVIEW
AND CONSULTATION VISITATION**

AUGUST 26th TO 29th, 2006

SEAADE Peer Review and Consultation Program
Review of School of Dental Sciences, Universiti Sains Malaysia
Kota Bharu, Malaysia - August 26th to 29th, 2006.

Report to Dr Abdul Rashid Haji Ismail, Acting Dean, School of Dental Sciences.

1. Introduction.

The SEAADE Peer Review Visit took place from August 26th to 29th, 2006 at the School of Dental Sciences premises located on the Health Campus of Universiti Sains Malaysia at Kota Bharu in Kelantan State. The School initiated the Visit by sending a formal request to the Chairman of the SEAADE Peer Review and Consultation Committee. Subsequently they submitted a completed SEAADE Visitation Self-Assessment Document for the Visitors, that were received by them a few weeks prior to the Visit.

The Visitors on this occasion were from the SEAADE Visitations Panel as follows:

- Professor Toh Chooi Gait – University of Malaya, Malaysia (Chairperson)
- Professor Lim Kwong Cheung – University of Hong Kong, Hong Kong
- Professor Grace Ong Hui Lian – National University of Singapore, Singapore
- Professor F. C. Smales – Asian Institute of Medicine, Science and Technology, Malaysia. (Rapporteur)

The Visit followed a pre-agreed intensive program, including inspection of facilities, meetings with staff and students, and observation of clinical teaching sessions as well as the reviewing of a wide variety of supporting documents. There were formal presentations by the Acting Dean and his colleagues on behalf of the University and the College, and also by the Visitors. The Panel held several private meetings with various staff and student groups during the Visit to discuss in detail particular aspects of the undergraduate and postgraduate programs for the final Report.

At the conclusion of the Visit, an outline of the Report was presented verbally to the Acting Dean and members of the School of Dental Sciences followed by a short discussion. Subsequently a written version of the Report was sent to the Acting Dean for factual correction and then acceptance. The Acting Dean has the option to have the Report presented in whole or part on the Official Website of SEAADE.

2. Acknowledgement

The SEAADE Peer Review and Consultation Program Visitors wish to extend their sincere thanks and appreciation to Dr Abdul Rashid Bin Ismail, Acting Dean of the School of Dentistry and Dr. Adam Husein, Deputy Dean Academic and Student Development together with all their colleagues for the meticulous organization and warm hospitality they experienced during their visit to Kota Bharu.

3. Malaysia and its Oral Health Needs.

3.1. Malaysia

Located centrally in South East Asia, Malaysia comprises 13 states and the Federal Territories of Kuala Lumpur, Labuan and Putrajaya. The capital city is Kuala Lumpur with a population of approximately 3 million. The South China Sea separates the states of Sabah, Sarawak and the Federal Territory of Labuan from Peninsula Malaysia, a distance of 540 kilometres.

Malaysia is a very stable federal nation with a parliamentary monarchy, the King being Head of State, and the prime minister taking the role of chief executive. The Head of State is elected to the throne on a rotational basis of 5 years. Nine of the federal states are headed by a Sultanate, four by a governor and one by a mayor.

In 2004, the population of Malaysia was estimated at 25.7 million of which 1.7 million are non-Malaysians. It is composed of Malays – 58%, Chinese – 24%, Indians – 8% and others – 10%. The male: female ratio is 100: 98 with literacy figures for men being 92.4% and women, 85.4%. The official religion is Islam with Christianity, Buddhism, Taoism, and Hinduism also practiced. The National Language is Bahasa Malaysia but English is widely spoken, particularly in cities, and Mandarin, Tamil and other South-East Asian languages are in general use.

3.2 Oral Health Needs of the Country

Despite growing prosperity and associated sophistication in matters of healthcare amongst the population, dental need in Malaysia is high. Caries prevalence in adults in Malaysia has been recorded at 90.3% with 98% of adult population estimated to require preventive or restorative intervention. More than one third of the population aged 65-74 years are edentulous, and tooth extraction continues to be a treatment of choice especially in rural areas. Only 58.7% of population perceived their need for oral healthcare and utilization of services is low at 25.2%, primarily driven by disease symptoms rather than a desire for maintenance of a healthy mouth.

The dentist: population ratio is a very low 1:9,000 and much worse in areas remote from the big cities of Peninsular Malaysia. Noting the rapidly increasing demand for dental services taking place recently in countries that have experienced similar economic expansion to Malaysia, the Government has wisely set a target of a dentist: population ratio of 1: 4000 to be achieved by 2010.

Therefore, it is clear that dental educational institutions should be aiming to meet the national need for well-trained dental professionals who can provide strategic plans to control common oral diseases such as caries in terms of proactive preventive measures. These professionals should also be fully able to participate in the delivery of services by being skilful in diagnosing and treating these diseases and providing oral rehabilitative care.

4. The Institution

4.1. Universiti Sains Malaysia

Universiti Sains Malaysia (USM) or the Science University of Malaysia, was established in 1969 as the second university in Malaysia and initially known as Universiti Pulau Pinang. In 1971, USM central administration moved to its present 239.4-hectare site, which had formerly been a military barracks. From the outset, Universiti Sains Malaysia had a mandate to provide, promote and develop higher education in the fields of pure sciences, applied sciences, pharmaceutical sciences, building sciences and technology, social sciences, humanities and education as well as to provide research, advancement and dissemination of such knowledge.

USM is a publicly funded university with its main campus on Penang Island, Malaysia. There are two other campuses, one also located in Penang, being for Engineering, and the other on the East Coast of Peninsular Malaysia, in Kelantan, for Health Sciences including Dentistry. With around 35,000 students in 2005, USM is the biggest university in terms of enrolled students in Malaysia. It is also one of a handful of universities in Malaysia identified as research-intensive, receiving special government funding for that purpose.

A purpose-built University Sains Malaysia Teaching Hospital (HUSM) in Kelantan has provided a focus for the University to establish a 72.84 hectare Health Campus on the East Coast of Peninsular Malaysia in the last few years. The Campus is located within the suburbs of the picturesque city of Kota Bharu. It began to expand rapidly when the School of Medical Sciences moved from there from Penang in June 1990.

Most undergraduate courses at USM are still using Bahasa Malaysia but the newer batches of undergraduate students are taught using English, especially in science and health related courses. International undergraduate students still have to demonstrate a level of proficiency in the national language as part of the entrance criteria.

4.2. The School of Dental Sciences.

In the early 90s, USM established a group within the School of Medical Sciences (PPSP – Pusat Pengajian Sains Perubatan) to plan a School of Dental Sciences (PPSG – Pusat Pengajian Sains Pergigian) to work in association with it and the University Hospital at Kota Bharu. Pioneer staff began training in 1993 with the first batch going to the University of Adelaide in Australia for that purpose.

The new School was to be innovative in many ways. Indeed the expressed wish was that it would incorporate novel philosophies and have a different character from existing dental institutions in Malaysia and neighbouring countries. Part of its distinctiveness came from its location on the east coast of Malaysia where it also formed the basis of a new tertiary referral centre for difficult dental cases, which gave an opportunity to develop niche treatment facilities. Additionally the School endeavoured to incorporate originality into its educational programs and its research strategies.

The establishment of the School of Dental Sciences was approved by the University Directorial Board in October 1998, and Associate Professor Dr. Ab. Rani Samsudin was appointed as the first Dean on 1st November 1998. The School Office became operational on 1st December 1998 at the Nursing Educational Unit, HUSM and then moved to a new location near the Accident & Emergency (A&E) Department, HUSM on 26th January 1999. The small nucleus of pioneer staff expanded with the appointment of Lecturers, Trainee Lecturers, Science Officers, Technologists, Matrons, Sisters and other support staff.

In early 2000, work on the development of the PPSG building began. In September 2001, with almost 95% of the building completed, the PPSG staff began occupancy. The building costing RM 12.5 million (around USD 3.3 million) was inaugurated on 22 March 2003.

The primary degree offered by the PPSG is Doctor of Dental Surgery (D.D.S) and the first intake of 40 students was in May 1999. That first batch graduated in August 2004 on completion of the five-year undergraduate program.

Throughout its development and up to a time just before the SEAADE Visit which took place at the end of August 2006, the activities of the School were conducted by a dynamic team ably led by the Foundation Dean, Associate Professor Dr. Ab. Rani Samsudin. Upon the Dean's departure for a period of extended leave, Dr Abdul Rashid Haji Ismail was appointed Acting Dean and acted as principle host to the SEAADE Visitors.

5. Strategic Planning

5.1 Mission, Vision and Quality Statements

The School of Dental Sciences is well equipped with various guiding principles and statements that are consistent with, and operate under those of the parent University.

The Mission of the Universiti Sains Malaysia is to lead and innovate in order to achieve excellence at international level through progress and dissemination of knowledge and truth, focused on quality that emphasizes professional and academic excellence, holistic individual development and strong commitment to community, national and universal aspirations.

The Mission of the School of Dental Sciences aligns well with that of the University. It specifies: pursuit of excellence and innovations; creation of a conducive educational environment; development of holistic programs; exploration of new frontiers of technology; and the fulfilment of community responsibilities. A final, very important objective is to train competent oral physicians and leaders for the community

The Vision of School of Dental Sciences is to be a centre of excellence in academia, innovations and research, and to act as the catalyst and leader for new knowledge in oral healthcare teaching, learning and research for Malaysian higher education.

The Quality Statement of Dental School states it is committed in carrying out high quality teaching and learning, facilitating world-class research activities and providing maximum standard services together with promoting the advancement of knowledge and intellect through continuous improvement for the benefit of all its customers especially students.

5.2 Observations on the Statements and measures needed for their achievement.

The Visitors regarded the statements as very well conceived, pointing the School in proper directions and sufficiently challenging to keep it moving forward. As described throughout this Report, there was ample evidence that all the staff and students made great efforts to fully live up to the statements. This is very praiseworthy because as will be seen the School has been very ambitious in its initial objectives with world-class research being pursued from the outset, and the production of fully fledged oral physicians with extensive medical education being one of the goals.

However to enhance and complement those efforts the Visitors considered that to more fully meet the spirit of the statements some thought should be given to additional mentorship arrangements for students and younger staff. Those measures should be associated with broadening elements such as social arts, values education and general self-development in the degree programs, although the congestion of the undergraduate curriculum noted elsewhere in this Report means considerable ingenuity will have to be demonstrated by the staff of the School to bring that about.

6. The Administrative Structure

It was gratifying to note that the Dean, in addition to being responsible to the Director of the Health Campus at Kelantan, is also able to report directly to the Vice-Chancellor of USM. To carry out his responsibilities the Dean is assisted by two Deputy Deans, one of whom looks after academic matters. Four Phase Co-ordinators report to that Deputy Dean (Academic & Student Affairs) and themselves can draw upon staffing and other resources organised into four subject-based groupings, namely Oral Biology, Community Dentistry, Restorative Dentistry and Oral Surgery. Although not explicitly stated, this is actually a matrix management structure.

The other of the two Deputy Deans is seconded from the School of Medical Sciences and has a primary responsibility for the progress of research and postgraduate teaching activities of the School. Research activities are conducted within a number of Research Groups, each with their own Group Leader and multidisciplinary staff membership is encouraged.

A further important input to the Dean in addition to those of the Deputy Deans is the Director of the University Hospital who has responsibility for the clinical facilities used by the School of Dental Sciences.

The Visitors regarded the Administrative Structure as being compact and efficient, particularly with regard to the short lines of communication and minimal number of

administrative tiers. Staff at all levels from the Dean downward could readily contact their superiors. Functions of key personnel were clearly defined and their range of responsibilities easily understood by everyone. Proof of the advantages of the arrangement was the impressive progress of the School since its inception.

The Visitors were concerned however about a perceived inadequate communication experienced by junior academic staff. It was possible they could get directives from several levels of the administrative structure and unless those messages were carefully coordinated, confusion could result. It was also noted that some of the Phase Coordinators had extensive administrative responsibilities and that was not matched by the amount of administrative support they were given to assist them in their duties.

7. The Undergraduate Program

7.1 Educational Program – Design

The undergraduate program is five years in length, divided into three phases respectively of one, two and two years. Fully integrated at systems level, the curriculum is taught in blocks of three to five weeks. The most striking feature is that a significant proportion of time, particularly during the first three years, is common to the medical program, with dental students being taught alongside medical students and taking the same examinations and assessments.

From time-to-time, some authorities in dental education have advocated such an arrangement with the aim of producing dental practitioners orientated towards being oral physicians. There are a number of valid reasons why such an arrangement could enhance aspects of delivery of oral health care, as explained below. Since the arrangement has been fully realised in Kota Bharu with three cohorts of successful dental students graduating, dental educationalists should consider paying special attention to the USM Program with a view to studying and evaluating its outcomes. It is an impressive model of its type which has been carefully implemented to international standards.

Lectures and practical classes are the major modes of delivery in the Phase I. More varied methods, e.g. Problem Based Learning and Computer Aided Instruction are prominent in Phases II and III. The teaching of clinical dental care by the students in the later phases is guided by lists of requirements of procedures to be completed.

7.2 The Phase Structure

Phase I runs through the first year and covers Basic Medical Sciences. As noted above, the topics are integrated at systems-level and taught as blocks in association with the medical students. Additionally there are three courses conducted through both Phase II and Phase III, two of which are unique to dental students. The course shared with medical students is the Community and Family Case Studies (CFCS). The other two specifically dental courses are the Oral (and Molecular) Biology Course and the Dental Skills Course which are delivered in free time outside the formal block structure used for both medical and dental students.

Phase II covers the second and third years of the Program and is devoted to Basic Clinical Sciences. Here again the material is integrated at systems-level and taught as blocks jointly with the medical students. However, in this phase there are three clearly dental-related blocks within the block structure. Also in this phase, there is a clearly defined block of 7 weeks for the continuation of the CFCS Program, and the first of two three-week blocks for an Elective Study, the other being in Phase 3.

Phase III covers the fourth and fifth years and emphasises Clinical Dentistry together with relevant Clinical Medicine needed for its successful practice. This phase is organised as interdisciplinary blocks, rotational postings (again following the block format) and self-study periods. Close support dentistry (4-handed dentistry) has recently been introduced into clinical teaching. Finally, the second Elective Study block is located at the end of fourth year.

Assessments and Examinations The assessments in Phase I and Phase II are chiefly summative, being those associated with the program taken jointly with the medical students. Clinical assessments are formative in nature, but at present are not included in formal continuous assessment exercises.

7.3 The Education Program and its Strengths

There is no doubt that with the above arrangements the dental students are covering all the knowledge required in a dental undergraduate program and doing it most thoroughly. Additionally, the system of attending the same classes with medical students seemed to have many positive outcomes. The lecturers delivering the joint teaching are, of course, the best that the combined Schools of Medical and Dental Sciences have to offer and it can be expected that both scientific and clinical content are fully up-to-date.

A special example of the high quality educational experience that the dental students encountered in the course of joint medical/dental student teaching is to be found in the superb Medical Clinical Skills Laboratory of the School of Medical Sciences. It is staffed by very enthusiastic doctors and nurses who have made themselves fully aware of the special requirements of dental students. Excellent instruction is provided in skills specifically needed by dentists, e.g. CPR, venepuncture and intubation. Dental students also benefit from demonstrations of the wider range of clinical skill techniques taught in the Laboratory. This was undoubtedly an impressive example of **Best Practice**.

The dental students told us that after initial surprise at the joint medical/dental teaching arrangement of the USM Dental Program they found they flourished in the environment, often being placed ahead of their medical counterparts in assessments common to both groups of students. The Visitors saw that other advantages will be forthcoming, including the fact that networking between these graduates with their medical counterparts and other healthcare professional groups should be excellent. A further advantage is that USM dental students will be very well prepared for postgraduate studies.

Within the wider aspects of the joint educational arrangements the dental students also fared well. For example, the CFCS course which is planned for them and the medical students is very innovative. It enables the students to recognise and respond to community needs by providing free medical and dental treatment to participating families in the small townships and villages that were visited. The Review Group identified this very well planned form of community-orientated teaching as a further example of **Best Practice** at the School of Dental Sciences.

The Elective Study in Phase II and Phase III is also very carefully conceived and diligently implemented. The choice of student projects which are undertaken during Phase III are overseen by a committee drawn from the whole School and the reports are very professionally produced. Of special interest is the use made of the Phase II element when the students investigate the organisational structures of dental teaching institutions in Malaysia and abroad as a preliminary to gaining permission to conduct an elective study. The Visitors considered this initial stage was an innovative form of broadening teaching and again identified it as an example of **Best Practice**.

7.4 Some Concerns regarding the Educational Program.

The Review Group recognised from the outset that dental students at USM were in a highly conducive educational environment well suited for learning. The School of Dental Sciences is still relatively young and most of the concerns noted below are well known to staff. Many are already being dealt with as a natural part of the evolution of the innovative curriculum.

As expected, several concerns centred on the ambitious joint medical, dental teaching system. The requirement that dental students learn the same amount of basic medical sciences as medical students needs careful monitoring as a significant portion of knowledge acquired will not be applicable to the practice of dentistry even as it evolves in unanticipated directions in the future.

There are also several obvious effects of the time taken for medical subject teaching. Firstly, there is an inevitable reduction in time available for study of the more relevant dental subjects. That is partly offset at USM by utilising free time, but consequently the numbers of protected self-study periods seemed to be well below those in many comparable dental teaching institutions. Also students appeared to be hard pressed to acquire the requisite range of dental skills prior to entering Phase III program. They reported having to shorten or forgo the vacation breaks available to the medical students and were not given extra grants within their scholarships to meet the financial costs of the additional days spent at the University.

The Visitors thought it appropriate therefore to make the following suggestions with regard to the joint teaching system. Firstly, the feasibility of decreasing less relevant sections of basic medical science for dental students should be considered, however without losing the many significant achievements and benefits of the USM system as noted above. Secondly, there should be a dental assessment component in Phase II Final Examination as taken by dental students. Thirdly, whilst retaining the exemplary features of the CFCS and the Elective blocks, these should be streamlined to minimise

any stress they might cause for dental students who were being expected to directly carry out patient care in the remainder of the Program.

With regard to the teaching of clinical dentistry in the programme the Visitors wished to encourage the process of fine tuning which has already begun. There are a number of alterations that could be made to Phase III. In particular, transferring medical and surgical postings from Phase III to Phase II would create time in which to effect other changes designed to allow students to see continuity of care. Those changes could include modifications to the block system so that adequate exposure to variety of cases could take place and a more gradual, progressive acquisition of dental clinical skills could occur.

The Review Group was pleased to see the time allocated to 'General Dental Practice' in Phase III and the changes that were taking place to enhance its quality, including the introduction of 4-handed, close-support dentistry. It is suggested that future changes could include the calibration of staff teaching in those sessions so students worked to agreed standards, and that the topic is renamed as Comprehensive Dental Care which would more correctly describe its content and purpose.

Finally, the senior members of the School may wish to consider the overall times devoted to particular types of teaching. The requirement that a primary (undergraduate) dental program should be equivalent to five years in length has gained wide global acceptance and the USM Program more than adequately meets that criterion. However, a secondary global target designed to ensure that graduates are competent in clinical skills is beginning to emerge around the requirement that three years or more are devoted to clinical dentistry with emphasis on hands-on activities in the clinic, simulation unit and technology laboratory. USM's School of Dentistry will wish to ensure that it is allotting sufficient time in its innovative Program to meet that emerging second requirement.

8. Postgraduate Programs

Dental postgraduate programs at USM are only just beginning to gather momentum, because in Malaysia an institution has to demonstrate the successful launch of the equivalent undergraduate course as a prerequisite for a postgraduate program initiation. Master of Science and Doctor of Philosophy programs, both based on research, have been offered for a few years now and have attracted local and international candidates. At the present time there are 7 individuals undertaking studies for PhD (one having graduated this year), and given the short timescale, an impressive 25 following the research Master of Science Program, (eight having graduated this year). Taught Master's programs are still at the planning stage, but are intended to be a large part of the teaching activities of the School in due course.

As noted above, the same Deputy Dean is responsible for both the postgraduate programs and the research activity in the School. This seemed to be very successful and the incumbent who was seconded to the post from the School of Medical Sciences appeared highly dedicated to the quality of the programs. The Visitors regarded this administrative arrangement as an example of **Best Practice**.

The postgraduate students who met with the Review Group considered that they were being treated very well and were most appreciative of the excellent facilities put at

their disposal. In particular, the large number of international students many of whom were from Arabian countries expressed themselves as very pleased they had come to USM's School of Dental Sciences in pursuit of postgraduate studies as part of their career pathways. The staff of the School should build on these very promising beginnings by undertaking continuous monitoring of the experiences of existing postgraduate students, using the results to adjust programs and enhance learning experiences of the students.

9. Research Activity

Despite the formidable challenges of beginning a new dental undergraduate program, the School of Dentistry quite admirably chose to strive to be a centre of research excellence from its inception. Many indications of the commitment are seen, including the fact that the role of one of the two Deputy Deans is predominantly concerned with the research effort. Seconded from the School of Medical Sciences, that Deputy Dean ensures that the combined resources of both Schools are brought to bear on dentally-related research output. Other well-conceived aspects of that strategy are apparent in the stated research philosophy of the School, which was that it will be: guided, focused, embrace retraining, encourage team-work, and be multidisciplinary.

As noted previously, the School has fully embraced the concept of having a manageable number of multidisciplinary research groups, but to allow for some diversity, each group has several focus areas. There are currently four groups, namely Craniofacial Biology, Dental Materials Sciences, Oral Cancer and CROHM (Cluster Research in Oral Health Management). Five years of R&D with defined objectives have been completed, and the strategy for the next five is being based on the concept that in the future human genetics will be the key to the solution of many important dental and craniofacial health problems.

The Visitors were shown some excellent research facilities with skilled and dedicated staff including technical staff well able to operate the sophisticated equipment that was at hand. Cooperative activities with the much larger School of Medical Sciences enable the most modern research technologies to be used. This, and other initiatives mean that despite the newness of the School of Dental Sciences, its research output will rapidly grow to equal that of more established institutions in both quantity and quality. The recent recruitment of a large number of research Master's students which is part of that progress has already been noted.

At present, research is funded largely from internal sources, but also with grants for the period 2001-6 amounting to 2.15 million Ringgit Malaysia. Seven new research proposals are under consideration by various grant giving bodies. The total number of publications from the School to date is 55, but only 10 of these are in international journals, strenuous efforts being made to greatly increase that number as soon as possible.

The Review Group consider that many appropriate steps are being taken to enable the realisation of the full potential of the broad base of research activities that have been established in such a short period of time. However, they did notice that further organisational steps were required. Those included provision of protected time for staff to engage in research activities, and the organisation of a structured scheme of

research mentorship for junior staff. Finally, the Visitors noted that in the wide-ranging plans for research, much of it was intended to be laboratory based and they considered greater emphasis should be put on randomized trials to make full use of the extensive clinical resources of the School.

10. Human Resource

The commitments of the School demand quite high levels of staffing with a wide range of specialist skills available in the workforce. Annual intakes of undergraduates have risen from an initial 40 per year to 60 currently, and the target for 2010 is 75. A total undergraduate complement of about 300 together with the increasing numbers of postgraduate students and role of a tertiary referral centre will mean that the institution will have to make considerable demands upon staff. The School also hosts a Dental Surgery Assistant Program and provides Professional Development Programs for local dental practitioners.

A combination of a current expansion of dental undergraduate student numbers and increasing demands for oral healthcare in Malaysia has put great pressure on availability of dental teachers in Malaysia. However, USM appears to be faring extremely well with the staff : student ratio being comfortably within local norms. In the near future the School's own first graduates will be gaining postgraduate qualifications and some will wish to return to be teachers in their alma mater.

The present staff whilst noticeably young are extremely enthusiastic and have a high level of respect for their leaders who have achieved so much in a short time. The Visitors found all staff to be very highly motivated, communicative and receptive to ideas of change. Both undergraduate and postgraduate students reported that they had a dedicated and supportive academic staff who they greatly appreciated. What was very noticeable was that active recruitment policies had attracted a substantial number of very talented and loyal support staff, especially in the technical and technological grades. Those policies were recognised by the Visitors as being an example of **Best Practice**.

However a number of matters did need attention with regard to staffing. There was a surprising lack of staff in grades between full professors and lecturers, although suitable individuals were available to be promoted to such posts and were bearing heavy responsibilities associated with seniority. It is understood that this would be a matter for the policies of the University's promotion committees. The attention of the members of those committees could be drawn to the length of dental training including post registration service requirements, and the time-consuming nature of clinical dental teaching. The members may wish therefore to take care when attempting to match the achievements of young dental academic staff against benchmarks derived from staff following pathways for other university subjects.

11. Physical Facilities

As might be expected in the case of a purpose-built building for dental education completed only a few years ago, the Visitors found the physical facilities to be of an exceptional nature. On four floors including a basement used for plant, storage and car parking, the 150,000 Sq. feet building is laid out in a practical fashion. The well-

appointed clinical facilities, lecture halls and tutorial rooms appear adequate to support current program. Despite the relative newness of the building, upgrading is

ongoing with an excellent lecture theatre equipped with two-way video facilities linked to dental surgeries being an example of a recently completed new installation. That recent addition to the clinical teaching facilities of the School was recognised as **Best Practice** because of the high quality yet economical live clinical teaching demonstrations which it allows to be given to large numbers of students seated in comfort.

The clinical nature of the building is reflected in the large and welcoming patient's entrance. Overall there is a most pleasant environment and the senior dental clinical support staff are keen to continue to upgrade both it and all the treatment areas so they are comparable with best in the world. Special teaching and support facilities for dentistry are also well provided. Thus there are modern laboratories for teaching dental skills including good simulation facilities for student learning. Also the prosthetic and ceramic laboratories are well equipped to support modern procedures.

To complement the teaching and clinical facilities, the School has assembled an impressive array of special equipment for craniofacial biological research. Finally, it was clear that staff and students were moving freely around the Health Campus and making full use of its resources as appropriate.

One area for attention did however come to the attention of the Visitors. They did think that the dental books in the library needed reviewing. There appeared to be very few latest editions of the popular dental textbooks which should be available to support the wide ranging programs and research activities of dental school. It also seemed that the range of journal titles for the support of the entirety of the teaching and research activities of an increasing complex institution was rather narrow.

12. Conclusions

Universiti Sains Malaysia's School of Dental Sciences has two exceptional features to be borne in mind whilst reading this Report. Firstly, there is the relative newness of the School; the first undergraduates only entered some seven years before this Peer Review took place. The vast majority of Schools world-wide which are reviewed under various regional and national schemes will at the very least be four or five times older. Secondly, the School has chosen quite deliberately to embody the idea of exceptional innovation in all its programs, particularly undergraduate teaching, and thus far has remained true to the conception.

The combination of these factors with the high level of leadership commitment and exceptional resourcing conveys the impression of a dental institution poised to make great achievements in the years to come, particularly if the current rates of progress and adjustments are maintained. To realise that achievement however, extensive ongoing fine-tuning both by the parent University and the staff of the School will have to take place. A substantial number of steps which might be considered are mentioned in this Report and it was gratifying for the Visitors to see that all the staff of the School appreciated the benefit of peer review.

Nevertheless, as is frequently stated, a SEAADE Peer Review Report cannot be exhaustive in its descriptions of matters for praise nor in its listings of areas for concern. Rather the Reports identify a few key matters that will enable the institution concerned to progress further towards full international status. In the case of the School of Dentistry of the Universiti Sains Malaysia, therefore the Visitors consider that some form of joint standing committee of review with a compact membership drawn from the University and School might be created to identify the various areas for change and be advised when modifications of current arrangements take place.

The School might also follow the example of a number of very successful dental institutions in the region and create a small panel of distinguished dental researchers from abroad who would make regular visits to the school and advise on research projects and strategy.

However, finally, and inescapably the overall thrust of this Report is one of admiration for many achievements made in so short a time by a very dedicated group of individuals. To be included on the list are accomplishment of purpose, contribution to the global dental educational debate, level of staff commitment, quality of facilities and there are many more smaller accomplishments which are outstanding in their way. Should it be considered helpful to create institutional role models that new dental institutions might strive to emulate during their period of establishment, then USM's School of Dentistry would be a worthy candidate.

The Visitors conclude this Report by wishing the Dean and Acting Dean, their staff and students every success. They found the Visit extremely interesting and worthwhile in every way.

.....
Professor Toh Chooi Gait
Chairperson

.....
Professor Frederick Charles Smales
Rapporteur

.....
Professor Lim Kwong Cheung
Visitor

.....
Professor Grace Ong Hui Lian
Visitor

FCS/TCG 4/12/2006