

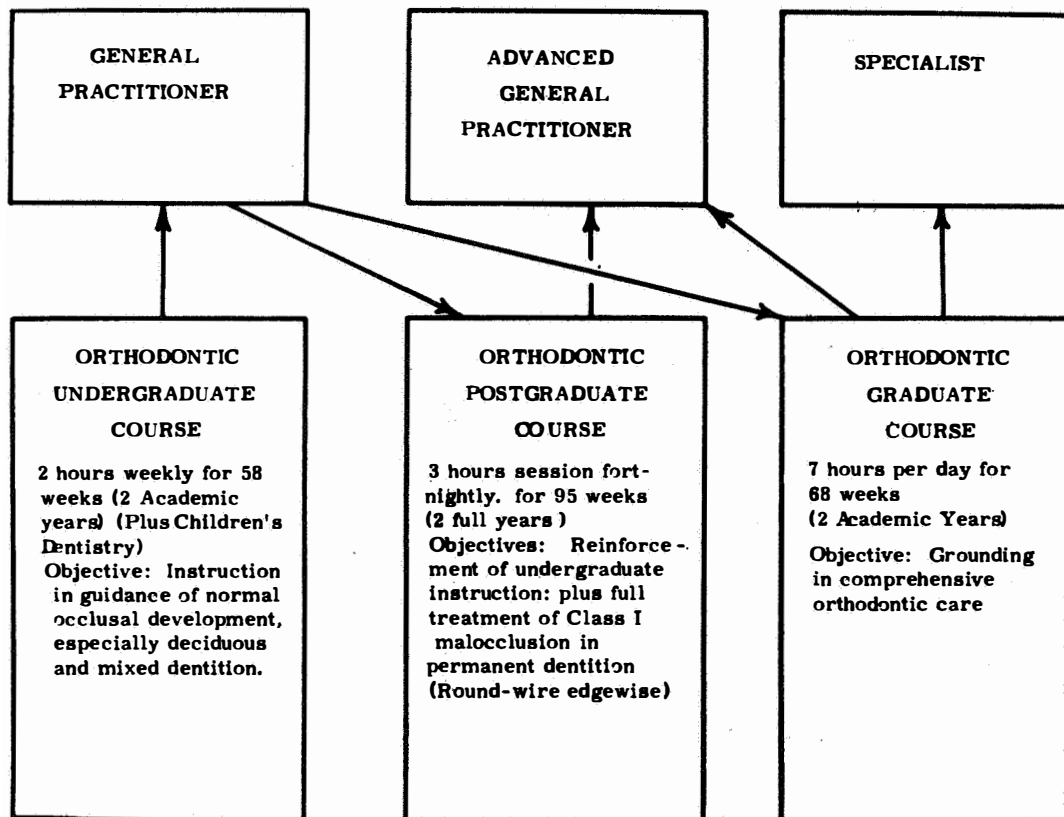
SPECIALIST ORTHODONTIC EDUCATION AT SYDNEY*

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It is common practice to commence a review of an educational programme by setting out the objectives of the programme. But, even with the best intentions, it is difficult not to make such objectives appear fictional or platitudinous. For the present I could say that they are present by implication even when not stated. Nevertheless, I will outline the framework of philosophical requirements within which a formulation of specific or general educational objectives might be fitted:

1. The educational programme should be made relevant to the student's day-to-day requirements in his ongoing work.
2. High degree of specialisation should be resisted.
3. The student should be adequately prepared to cope with changes in society and technical and scientific innovation.
4. Continuing education beyond any particular level should be planned for and available.

Now to relate some of these ideas to Sydney. Here, orthodontic education is being geared to enable progress from the earliest general practitioner phase to what I am calling the "advanced general practitioner" phase, and also the specialist. The possible pathways of development of basic orthodontic knowledge and skill are represented below together with an indication of the general nature of the training being offered.



*Based on a lecture presented to the Victorian Branch of the Australian Society of Orthodontists, 6th November 1971.
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General Timetabling:

The academic terms for the graduate course are outlined below.

	First Year	Second Year
First Term:		
Mid-February to mid-May	13 weeks	13 weeks
Second Term:		
Early June to mid-August	11 weeks	11 weeks
Third Term:		
Early September to early November	9 weeks	9 weeks
Pre-Christmas Term:		
December	4 weeks	—
a total of 70 weeks		

Having briefly observed on the perspectives of the general educational programme, I will now proceed to specifically review the so-called graduate or full-time training of orthodontists, leading to a Master of Dental Science qualification.

University Regulations:

Dental graduates of the University of Sydney and similar approved institutions may be admitted to the full-time orthodontic course as candidates for the degree of Master of Dental Science. There is provision for admission on probation, the candidates being progressively assessed. No prior selection of candidates is currently applied.

The research component of the master's

degree may contribute towards requirements for the degree of Doctor of Philosophy taken subsequent to a master's degree.

Each candidate has a full-time staff teacher as supervisor with additional associate advisers appointed as required.

There are examinations at the end of each year of the two year's programme. A thesis based on original research must also be submitted as partial fulfilment of requirements for final candidature for the degree.

These regulations do not make any stipulations about a prior period of general practice experience, but applicants are encouraged to consider this as it relates to requirements for registration as a specialist by the State Dental Board.

Course Content:

Within the above periods, lectures, tutorials, discussions, practical and other supervised work are arranged as follows:

Subject	Contact hrs. per week	Duration
Orthodontic theory	5	1st, 2nd, 3rd Terms
Orthodontic techniques	15	1st Term
Clinical orthodontics	15	2nd to 6th Terms
Case analysis and reports	5	1st, 2nd, 4th, 5th Terms
Dental orthopaedics (cleft palate, scoliosis and ear, nose and throat clinic patients)	3	4th, 5th, 6th Terms
Oral physiology tutorials	2	2nd, 3rd Terms
Preventive dentistry	2	1st, 2nd, 3rd Terms
Statistical methods	2	1st Term
Dental public health	2	1st Term
X-ray cephalometry	2	1st Term
Growth and development seminar	2	3rd and 6th Terms
Orthodontic biomechanics seminar	2	2nd and 5th Terms
Short courses: Oral Surgery		
Periodontics		
Speech Therapy	3 to 6 hrs. total for each	during the course
Report and thesis writing		
Genetics		
Cleft lip and palate		

There is little point in discussing curricular detail at this time. As indicated earlier, an attempt is made to apply the educational principle of searching for relevance of background knowledge. Thus, for example, study of embryology is not taken in isolation but as it relates to theories of facial and skull growth and congenital malformation; or again, neurophysiology in oral physiology is considered as it relates to the trigeminal system of the oral and jaw regions.

Advantages have been found in arranging overlap of classes, i.e. having a first year class and second year class running concurrently. Such teaching and seminar topics as growth and development, statistics and preventive dentistry can be provided every second year, so conserving teaching time, in turn enabling expansion of teaching and study areas. Having such a combined group of students also enhances in-depth and wide-spectrum study and discussion. There is a sharing of the load of study preparation and a wider diversity of thinking and experience which is being pooled in both theoretical and practical work.

Practical Exercises:

There is the obvious need to develop certain technical and related skills from forming archwires to tracing cephalometric x-rays, from forming orthodontic bands to preparing study models.

The value of typodont demonstration of orthodontic treatment techniques is well accepted.

Students are still required to learn the techniques of pulling up and finishing orthodontic bands, leading to the application of these banding methods for two patients. Apart from this requirement, all other banding is completed using preformed materials.

Clinical Practice:

Clinical experience is developed over approximately twenty calendar months, with the initiation of treatment in varying forms for as many as forty to fifty patients.

A typical distribution of case load per student at the end of his first year is as follows:

18 Full/Full Bandings—

14 Begg light-wire

4 Round-wire edgewise

and Burstone edgewise, with all main Angle Classes of Malocclusion represented.

18 Miscellaneous (in various combinations)—

Pre-treatment observations, assessments,

Patients under retention,

Single arch full bandings,

Segment of arch fixed appliance,

Extra-oral anchorage,

—cervical,

—headcap, chin cap.

Maxillary arch expansion

—fixed lingual arches,

—rapid arch expansion screws.

Mandibular arch expansion/retention (mixed dentition),

Andresen appliance,

Hawley plates with auxiliaries.

Students would hope to complete up to 50 per cent of their treatments by the end of their course. They would be able to observe patients under orthodontic retention and post-retention from earlier courses.

Source of Patients:

Almost all patients for the Graduate Orthodontic Clinic are referred by private practitioners. These patients and their parents are not only well motivated towards the acceptance of orthodontic treatment, but are adequately prepared by their dentists to enable prompt commencement of treatment where this is indicated. The liaison between the Clinic and private practitioners is a potentially most useful and necessary part of the graduate student developing experiences. He prepares a comprehensive clinical report and treatment plan for each patient, and this is sent to the referring practitioner along with any specific requirements for restorations, extractions or measures of preventive dentistry.

Patients pay hospital fees for treatment according to a means test scale. Although there is no ceiling limit on family income for admission to the Clinic, there is an upper limit of treatment fees which is less than the private fee for similar treatment.

A proportion of patients belong to special category clinical problems:

Nasal obstructions—

E.N.T. referrals.

Cleft lip and cleft palate—

baby, child, adolescent, adult.

Scoliosis patients—

Milwaukee brace.

Surgical orthodontics—

ectopic canines,

alveolar sections,

jaw sections.

Anterior arch crowdings—

adolescent and adult interproximal stripping.

Temporomandibular joint dysfunctions.

Head and neck congenital syndromes.

During their Second Year, students are given additional opportunities to attend more such special patients in the Out-patients' Department Dental Clinic of the Royal Alexandra Hospital for Children, under tutor supervision.

Clinical Facilities, Equipment, etc.

Each student has his own dental unit and chair for clinical work. All necessary orthodontic instruments for making appliances are provided. Students are encouraged to purchase a basic simple armamentarium of pliers for arch wire bending.

There is a dental laboratory adjacent to the Clinic, serviced by a technician.

A comprehensive range of all necessary orthodontic materials is on hand. Students are enabled to make comparative tests of a number of materials obtained from several manufacturers, so providing them with further guidelines for clinical practice beyond the Course.

Spot-welding, soldering and electro-polishing equipment is all at hand. An X-ray cephalometer is installed in the Clinic.

Dental chairside assistance is provided to maintain supply of clean and sterile instruments and to assist in some clinical procedures.

Some secretarial assistance is available for preparing reports and correspondence relating to patients.

Staff:

It is appropriate to pay tribute to and stress the essential contribution made to smooth functioning of the Clinic by the excellent services of the nursing staff of the Clinic, and also the tutors.

The teaching staff comprises two members of the full-time academic staff who share their time between undergraduate and graduate teaching, and four part-time senior tutors, who are practising orthodontists, and who are only concerned with graduate teaching in orthodontics. All teaching staff share responsibility for supervision of tutorials, technique and clinical work. They are supported by lecturing staff of other Departments and other institutions. The full-time lecturing staff is responsible for supervision of thesis work and for the general organisation of the course.

Examinations:

Written examinations are required to be taken at the end of the First Year in Introductory Theory and Practice of Orthodontics, and in Oral Physiology. In addition, the student is considered to be under probation during the First Year when his general progress with assignments and practical work is assessed.

At the end of the Second Year, in addition to presentation of the Research Thesis, there are written examinations to be taken covering the broad field of Orthodontics. There is also a viva voce examination and a review of several case presentations of each student.

Research and Thesis:

The thesis requires original thought, experimentation and observation, the basis of research. It is intended to inculcate principles of scientific method, whilst at the same time enabling the student to produce a thesis that is a personally satisfying accomplishment. The student with advice from his supervisor will develop his own research study. In general, he could be expected to concentrate his research efforts during the Fourth, Fifth and Sixth Terms in the Second Year of the Course.

Facilities and technical aid are available in the Department and through liaison with other University Departments and Institutions for carrying out a range of research projects. These provide for work in histology, radiographic cephalometry, study of masticatory dynamics, dental materials, orthodontic mechanics, X-ray diffraction, radio-isotope tracer experiment, and comparative aspects of growth and jaw function, general diseases and jaw malformations of children, education and applied psychology, epidemiology, etc.

Fees and Financing the Course:

Total tuition, degree and student union fees for the two years of the course amount to approximately A\$700.00. Students must also provide for the final production of their written thesis.

Students must finance and support themselves during the Course. There is opportunity to compete for National Health and Medical Research Council Research Studentships, or for Commonwealth Government and University Postgraduate Research or Course Awards.

Recipients of such scholarships may be granted remission of some tuition fees.

An early new year vacation of approximately five weeks permits students to take locum tenens positions to supplement their finances.

It is unfortunate, and indeed one may judge unrealistic that, although patients pay for their treatment, no portion of their fees comes to the students or the Department. Under the circumstances, there is the quite rare situation of the Clinic being financially self-supporting so far as Dental Hospital nursing staff salaries and expendable materials are accounted for.

All teacher and technician salaries are provided by the University, as are the instruments and equipment used in the Clinic, Laboratory and in numbers of research projects.

Enrolment in the Course:

The statistics of enrolment since the Course was instituted are as follows:—

- 1964—three students,
- 1966—four students,
- 1967—eight students,
- 1968—three students,
- 1970—three students,
- 1971—three students,
- 1972—four accepted,
- 1973—four accepted,
- 1974—one accepted so far.

19 of the enrolled students have been graduates of the Sydney University Dental School; 9 have been graduates of other Australian Universities; and 5 have been students from overseas.

It is unfortunately noteworthy that there has been only one enrolment from the fairer-sex.

A maximum of four students is now admitted for any one course, admissions being determined in order of application, subject to satisfying university regulations.

Comment:

Development of the Sydney full-time two years' course of orthodontics has not been without its problems, which I suppose is to be expected. Improvement in the clinical environment to reduce the "tight" nature of clinical activities, the provision of additional chairside and secretarial assistance, and some additional items of clinical equipment would be desirable.

Such material needs are not the means of making or breaking the Course, although their

provision would provide a boost of morale to sustain the enthusiasm and dedication of the nursing and teaching staff. Another undoubted morale booster would be some payment to graduate students for services rendered. As yet, this is an arguable matter.

These are some of the more or less domestic problems, but there are others of more general import which I hazard to guess may be relevant in all Australian Dental Schools which currently operate graduate training programmes.

University, faculty and departmental organisation militate against any generalised academic interest in the development of any specific graduate training programme, except where this programme is central to an academic "empire." Of course, such a situation cannot be totally blamed for any depressed state of the particular training programme. There is also a degree of departmental and dental school parochialism which encourages insular attitudes and discourages much ready exchange of thoughts and experiences.

I believe that the speciality of orthodontics in Australia has also been insular with a generally too-equivocal attitude towards education of orthodontists. There seems to be no clear idea as to what kind of educational product is required. Some professional people talk glibly about "raising standards," "giving status," and dental or orthodontic "science" of the future — if "science" is indeed what the community needs of dentists and orthodontists. "Science" is being equated with "thinking." But much science as it is currently envisaged, taught and practised in dentistry is shallow and little more than uninspired observation or accumulation of so-called "basic knowledge."

Educationally, it would be difficult to favour a critical rationalism in dental science and research over an equally critical rationalism of clinical practice in order to inculcate thoughtful, responsible, professional attitudes.

I would question whether any such critical thinking has been mixed in with the undercurrents of ideas on orthodontic education which are now occasionally breaking the surface of real life. It is most unfortunate that the Australian College of Dental Surgeons appears to be committed to duplicating orthodontic education. At least one likely effect of such policy will be to embarrass the dental schools by stretching the teaching line so much more thinly. These schools have the best, if not the only qualifications for academic teach-

ing and, through their associated institutions, their teaching hospitals, they can provide the breadth of clinical experience which is nowhere else available in a single location. If such institutions are not going to be used, then the alternative specialist training would not rate consideration. If such existing teaching facilities are intended to be used, it is difficult to see how these could be legitimately obtained, even with hard cash grants from, say, the College unless this be "without strings attached." Australian dentistry may be affluent, but not so affluent to be able to support alternatives of specialist training.

It certainly seems that many orthodontists are thinking too slowly, if at all, about what they want of professional training, but equally

what the community and dental profession as a whole want, of orthodontists.

Conclusion:

All the foregoing, fact and philosophy, has not necessarily amounted to an absolute plea for continuing support of university graduate training of specialists, but I would hope to have said enough to encourage Australian orthodontists to pause, co-operate in a stock-taking, and produce some positive and responsible views about orthodontic education before too long.

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IMPORT DUTIES

Recent changes in import duties, and variation in assessments, have been gazetted, and a circular has been sent by the Federal Secretary of the A.S.O. to all State Branch secretaries with respect to goods especially designed for use in orthodontics.

Members desiring such information are asked to contact their A.S.O. State Branch Secretary.