

**FEATURES
SECTION**

Reviews & Abstracts

Education, March 2002

This issue reviews some recently published textbooks on education. They are quite diverse in their subject matter and all, to a greater or lesser degree, show the change towards a more student-centred approach that is taking place in higher education. There are an increasing number of such books becoming available, reinforcing the belief that the process, as well as outcome of education is important. Why should this be?

The raised profile of education stems from the scientific research over the last 20 years or so that has given us an improved understanding of how adults learn, and learn best. This is linked to the developments in pedagogy such as problem-based learning. This approach is spreading across dental schools around the world, at variable pace and penetration, and is perceived by its adherents to be a 'real life' way of facilitating student learning. Altered attitudes to education also play a part. There is a view taking hold in institutions of higher education (driven by the consumer pressures that are prevalent in all walks of life now) that teaching is of equal importance to research, and excellence should be rewarded equally and appropriately.

Within Europe, dental education has received a big boost with the development of the DentEd and DentEd Evolves programmes. The DentEd programme is designed to lead to the convergence of educational outcomes across Europe and has been very successful with over 40 dental schools having been visited. The different pedagogical processes in the different disciplines within dentistry were summarized and have been published. The DentEd Evolves programme has recently completed the reports on recommendations for progress in dental undergraduate education. Both these are available on the web sites (www.dented.org and www.dented.org/dentedevolves.php3).

R. G. Oliver

Journals

EUROPEAN JOURNAL OF ORTHODONTICS
<http://www3.oup.co.uk/eortho/>

ANGLE ORTHODONTIST
<http://www.angleorthodontist.org/>

AMERICAN JOURNAL OF ORTHODONTICS
AND DENTOFACIAL ORTHOPEDICS
<http://www.mosby.com>

THE INTERNATIONAL JOURNAL OF ADULT
ORTHODONTICS AND ORTHOGNATHIC SUR-
GERY
<http://www.quintpub.com/index.html>

JOURNAL OF CLINICAL ORTHODONTICS
<http://www.jco-online.com>

AUSTRALIAN ORTHODONTIC JOURNAL
www.aso.org.au/aoj.htm

THE JOURNAL OF THE INDIAN ORTHO-
DONTIC SOCIETY
www.iosonline.org

THE KOREAN JOURNAL OF ORTHODONTICS
<http://kjo.or.kr>

ORTODONTIA
(Revista de Sociedade Portuguesa de Ortopedia Dento
Facial)
No web page given. Articles in Portuguese and English

KIEFERORTHOPÄDIE
No web page address Published by Quintessence.
Articles in German with English abstract

REVISTA ESPAÑOLA DE ORTODONCIA
No web page Articles in Spanish with English Abstracts

ORTOGNATODONZIA ITALIANA
<http://www.sido.it>. Articles in Italian with English
Summary

Relevant research from non-orthodontic journals

This occasional section is designed to draw the attention of readers to papers which have been published in non-orthodontic journals, but which may be of interest. The abstracts have been selected and edited by Professor Nigel Hunt.

Arch Expansion

Immediate Post-expansion Changes Following the Use of the Transpalatal Distractor

Pinto PX, Mommaertts MY, Wreakes G, Jacobs WVGJA

Journal of Oral and Maxillofacial Surgery 2001; **59**: 994–1000

Purpose: This study analysed the immediate post-expansion positional changes of the maxillary halves resulting from the use of the transpalatal distractor (Surgi-Tec NV, Bruges, Belgium).

Patients and methods: Corticotomies were performed in the same way as surgically-assisted rapid palatal expansion, all from a buccal sulcus approach. Titanium abutment plates with box extension were placed horizontally in the vertical wall of the palatal vault overlying the second premolar root through a mucoperiosteal incision and fixed with titanium screws 5 mm in length. An appropriate telescopic distraction module was fitted in the slots of the boxes. Expansion started 1 week after surgery, at a rate of 0.33 mm/day. Digital measurements on digital photographs of the models were obtained from 20 post-adolescent patients before and immediately after transpalatal distraction. The distractor was placed at the level of the second premolar. Pterygo-maxillary separation was not performed. Changes in the inter-canine, inter-premolar, and inter-molar width, in the dental arch perimeter, and in the premolar and molar angulations in the frontal plane were analysed and correlated.

Results: Width expansions of 35.7, 31.7, and 22.7 per cent were noted in the canine, premolar, and molar regions, respectively. There was a mean increase of the arch perimeter of 10.5 per cent, which correlated well ($P < 0.001$) with the expansion at the canine and premolar level. The mean angulation changes in the frontal plane of the premolar and molar segments were minimal, -8.3 ± 9.6 and 0.9 ± 9.9 degrees, respectively. The change in angulation at the molar level correlated ($P < 0.005$) with the amount of expansion in that region.

Premolar angulation did not correlate with the expansion, and segment angulation did not correlate with age.

Conclusions: The expansion at the canine level was 1.5 times greater than at the molar level (corrected value relative to the original inter-molar width). The change in arch perimeter can be predicted from the expansion at the canine and premolar level. Expansion in the frontal plane occurs with little tipping of the segments.

Comment: This prospective clinical study was based on 20 consecutively treated patients aged 14–30 years, with an average age of 21.5 years. No orthodontic appliances were used. The paper includes a clear description of the experimental method, but falls down on the lack of raw data, a point clearly noted in the discussion of the paper written by Professor Proffit. According to the authors, as the distractors are bone-borne the expansion effects were different to those reported with either Rapid Maxillary Expansion (RME) or surgically assisted-RME. Greater expansion was noted in the canine than in the molar region and relatively little tipping of the dentition occurred.

Implants for Orthodontic Anchorage

Short Epithetic Implants for Orthodontic Anchorage in the Paramedian Region of the Palate

Bernhart T, Freudenthaler J, Dortbudak O, Bantleon H-P, Watzek G

Journal of Clinical Oral Implantology Research 2001; **12**: 624–631

Objectives: To evaluate the efficacy of short epithetic implants for orthodontic anchorage in the paramedian region of the palate.

Study design: A prospective clinical trial.

Methods: Twenty-one patients had implants placed in the paramedian region of the palate. After a mean period of 4 months of unloaded healing the implants were subjected to either direct or indirect orthodontic loading.

Results: No implants were lost during the healing period, although three were considered as failures during the subsequent loading period. The time related survival probability was 85.8 per cent after 22.9 months.

Conclusions: Short epithetic implants are suitable to achieve maximum anchorage in the paramedian region of the hard palate in orthodontic treatment.

Bone grafting in clefts

Bone Volume after Secondary Bone Grafting in Unilateral and Bilateral Clefts Determined by Computed Tomography Scans

Van der Meij AJW, Baart JA, Prah-Andersen B, Valk J, Kostense PJ, Tuinzing DB

Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, Endodontics 2001; **92**: 136–141

Objective: The purpose of this study was to evaluate the outcome of bone grafts in cleft palate patients, thus assessing the amount of bone necessary to facilitate eruption—especially in the buccopalatal direction—of the permanent canine into the bone graft.

Study design: Computer tomography scans taken immediately post-operatively and 1 year post-operatively of 42 unilateral and of 8 bilateral cleft lip and palate patients who underwent surgery at the age of 9 years (early secondary bone graft) or 12 years (late secondary bone graft) were compared. Three slices from the computer tomography scans taken immediately after the surgery were selected from the centre of the bone graft and were then compared with corresponding slices from the 1-year post-operative computed tomography scans. Statistical analysis was performed by using the Wilcoxon two-sample Rank Sum test.

Results: In the unilateral cleft group, 70 per cent of the transpalatal bone remained in the cleft area after 1 year, whereas in the bilateral cleft group, only 45 per cent of the initial bone graft remained after 1 year.

Conclusion: No statistically significant difference was found between early secondary bone grafting and late secondary bone grafting. In most cases, a sufficient amount of bone was present in the target area to facilitate eruption of the permanent canine.

Erosion of Enamel

The Erosive Effect of Herbal Tea on Dental Enamel

Brunton PA, Hussain A

Journal of Dentistry 2001; **29**: 517–520

Objectives: The aim of this study was to determine whether conventional black tea and a herbal tea were capable of eroding dental enamel. A further aim was to investigate whether herbal tea of the type tested eroded dental hard tissues to a greater or lesser extent than conventional black tea.

Methods: Three groups of 21 teeth were exposed to a conventional black tea Typhoo® (Group A), a herbal tea Twinings® Blackcurrant, Ginseng and Vanilla (Group B), and water, which acted as a control (Group C). Sequential profilometric tracings of the specimens were taken, superimposed, and the degree of enamel loss calculated as the area of disparity between the tracings before and after exposure.

Results: Conventional black tea and herbal tea, of the type tested, both resulted in tooth surface loss. Tooth surface loss, which resulted from exposure to herbal tea (mean 0.05 mm², SD 0.02), however, was significantly greater ($P = 0.00$) than that which resulted from exposure to conventional black tea (mean 0.01 mm², SD 0.00) and water (mean 0.00 mm², SD 0.00).

Conclusions: It was concluded that herbal tea and conventional black tea of the type tested result in erosion of dental enamel. The erosive effect of the herbal tea of the type tested was five times that that of the conventional black tea tested. The cumulative effects of regular consumption of herbal tea of the type tested are likely, therefore, to be of clinical significance.

Comment: The specimens were immersed for 14 days in the test solutions, which, as pointed out in the article, approximates to the equivalent of an individual drinking four cups a day for 18.4 years taking an average of 15 sips, each lasting 3 seconds. Food for thought!

Book Reviews

Problem Based Learning: Case Studies, Experience and Practice

P. Schwartz, S. Mennin and G. Webb (Eds)
Kogan Page, 2001
182 pp., Paperback, £19.99
ISBN 0749434929

This is a multi-author book that provides a valuable resource for those who already undertake PBL within their curriculum or for those who are planning its introduction. The book is divided into three sections; Political, Administrative and Resource Issues; Issues Relating to Teachers; Issues Relating to Students. Within each section are seven or eight chapters exploring different facets of the issues falling under the section's title. Each chapter is arranged into three parts. Part 1 describes a particular problem that is based on the real life experiences of the chapter's author(s). At the end of Part 1 the reader is invited to stop and answer some questions relating to the situation described in Part 1. Part 2 then goes on to describe how the author(s) addressed the situation and its outcome. The reader is then invited to reflect on the described outcome and explore alternative strategies of their own. The final part is reflective comment by the author(s) and a small number of relevant references. The way in which the book has been planned reflects neatly the way in which PBL should be applied.

The editors have persuaded at least one author of each chapter to provide an email address for readers to make contact. The editors have included their own email address and you get the feeling that they really would like you to make contact.

If you are planning to introduce PBL, then this book will help you understand the difficulties that you may face and provide you with a range of counter-arguments to overcome the doubters. If you have already introduced PBL, then read this book to help you develop further. Highly recommended.

R. G. Oliver

A Practical Guide for Medical Teachers

J. A. Dent and R. M. Harden (Eds)
Churchill Livingstone, 2001
453 pp., Paperback, £34.95
ISBN 0 443 06273 0

The title of this excellent book uses 'Medical' in the broadest possible sense, as the information contained within the book is generic to all healthcare teachers. It is a multi-author book, with the majority of the contributors based in Dundee, but there are contributions from the University of Sydney, the Gulf University (Bahrain), the University of Ottawa, and, more locally, the Universities of London and Wales.

The book is divided into seven sections, each with four or five chapters. The layout of the book is easy on the eye, with two-thirds of the page for text, and the remaining third reserved for pertinent quotations, diagrams, and key learning points. It is clear from reading the text that the authors have a strong practical background in their particular areas and, whilst passing on theoretical educational concepts, they do not let these dominate. Each of the 39 chapters concludes with references and further reading, and there is an Appendix with a list of useful websites.

This book would be useful for anyone considering change to any part of their course, providing helpful guidance on how to achieve change, and providing a range of alternative strategies with an evaluation of each. It can also benefit the teacher who wants to improve her or his knowledge and understanding of the topic, and should be recommended reading for newcomers to academia.

R. G. Oliver

Universities and Students. A Guide to Rights, Responsibilities and Practical Remedies.

G. R. Evans and J. Gill
Kogan Page, 2001
192 pp., Paperback, £18.99
ISBN 0 7494 3465 1

This is an unusual book that fills a gap in the literature on the relationship between student and university. The

logistics of place selection, admission, fees, and loans is covered first, followed by welfare and safety issues, including disablement. Quite some space is given to conduct issues including plagiarism, and the preparation for and taking of examinations. However, right from the start, the book takes these topics as a list of problem areas from a lawyers-eye view, rather than any typical student-eye position, which the authors claim it does. Each chapter ends with a student action checklist. However, it seems a sad day indeed if 'on becoming a student' should entail rooting around in the initial literature to find 'disclaimers' and ask what they mean; to have to ask for equal opportunities policies and equal access policies and to ask if the university is an 'old' or 'new' (post-1992) one; whether you will become a 'member', as well as a student, and whether there is a visitor. All is preparation for a future legal battle. On 'course and examination requirements' the student action checklist starts to look more like an incitement to complain: 'it is reasonable to complain if the university has failed to fulfil any promise made to students—Make the complaint in moderate language and try to get a group of the students affected to sign it—Ask the student union to endorse the complaint.'

When it comes to the 'complaints' chapter a long list of items on 'What to complain about' are suggested. Apart from the obvious 'lectures are being cancelled', 'I have been raped', 'I have suffered disadvantages because I am a girl/boy/from an ethnic minority/disabled, to 'I do not like my director of studies' and 'My supervisor stole my ideas'! I am less certain about 'The cleaners keep upsetting my experiments by dusting round them' and, especially, 'The porters took away our aerosols by force when we sprayed rude words on the walls in the porters' lodge. They assaulted us.' The book is thus a mixture of serious case-quoted explanations of the various unpleasant tangles that students and universities have found themselves in.

The following of internal and external procedures that can help remedy situations when horns are locked between student and institution are particularly well covered. The checklists appear as an impossibly defensive set of advice for the regular student, but helpful reference for those who can sense trouble or who are caught up in it. At worst the book has a casual and mischievous air. Practically all the problems occurring are to do with poor communication, but this word is indexed only once. I would like to see a book that concentrates on good university practice. Students should certainly complain, and complain loudly and early if necessary, but I would

hate to see a book such as this incite students to set time-consuming formal complaints procedures into motion that were not entirely necessary.

J. Sweet

Core Clinical Skills for OSCEs in Medicine

T. Dornan and P. O'Neill

Churchill Livingstone, 2000

352 pp., Paperback, £14.95

ISBN 0443063664

This book is one of a successful series from Churchill Livingstone. The authors are both well respected as both clinicians and medical educators; their credibility as medical teachers and examiners is evident on every page. This book is aimed at medical students, but may well prove useful to dental educators, clinical teachers in oral medicine and surgery, or dental students (especially those considering becoming doubly qualified). The Objective Structured Clinical Examination (OSCE) has been around for a while as one of a battery of assessments, but it is only recently that most UK medical schools have introduced the OSCE to their curricula. A number of dental schools worldwide have also introduced OSCEs and this book will certainly stimulate thoughts on how this trend might be extended to other dental schools, vocational training schemes and other postgraduate courses.

The comprehensive contents list includes sections on specimen OSCEs, history-taking and examination skills, data interpretation, procedural and communication skills, and attitudes—all areas in which dental students are expected to display competence as much as their medical peers.

The medical systems approach featured in this book may not seem immediately relevant to dental students, but provides a good primer and adjunct for the teaching of medical components in most UK dental curricula.

The layout is clear and the authors compress a lot of useful information into 327 well-structured pages. Assessment is often the last element to change in any curriculum: as the General Dental Council is about to revise the First Five Years document, this book may well help dental educators to develop a structured examination that complements the educational innovations in many dental schools.

M. G. Brennan

A Handbook for Teaching and Learning in Higher Education. Enhancing Academic Practice

S. Marshall, H. Fry and S. Ketteridge (Eds)

Kogan Page, 1999

416 pp., Paperback, £25.00

ISBN 0 7494 2948 8

This book should be required reading for all involved in teaching adult learners. Although the editors and authors come from a very wide range of professional and vocational backgrounds, they are all educators or staff developers in British universities. Of the 28 contributors, Heather Fry and Adam Feather have expertise in medical and dental education, and this is reflected in their contributions to this book.

The book has three main parts: Development of Practice, Development of the Academic for Teaching and Learning, and Working in Discipline-Specific Areas. Each part contains a range of sections.

I would particularly commend this book to all those seeking membership of the Institute for Learning and Teaching (ILT), not least as it contains (and explains) much of the educational jargon that will enhance an application.

The extensive list of teaching and learning topics includes lecturing and small group teaching, assessment, and evaluation, as well as sections on motivating students, reflective practice, information technology, and supervising projects and portfolios. Sections I found most interesting were on the observation (and appraisal) of teaching, and on the construction of teaching portfolios by lecturers and tutors as part of their continuing professional development.

The book is well presented and structured, with copious use of case studies, checklists, and top tips in over 408 pages. Dental teachers buying this book will undoubtedly benefit from discovering the educational techniques and strategies employed by our colleagues in other professions and vocations.

M. G. Brennan

Systematized orthodontic treatment mechanics

Second Edition

McLaughlin RP, Bennett JC, Trevisi H

Mosby International Ltd., 2001

336 pp., Hardback, £115

ISBN 072343171X

This book is an essential purchase for clinicians interested in high quality Straight Wire treatment. It clearly

and concisely provides explanation of most aspects of this popular approach to appliance therapy. This text is a welcome addition to the first two authors' previous texts on this subject, published 4 and 8 years ago. The authors set themselves very high treatment goals and they achieve their objectives, as exemplified by the superbly treated and beautifully illustrated cases.

The book starts with a comprehensive overview of their treatment philosophy leading into a detailed description of the MBT appliance, the rationale of which is eminently sensible. All possible permutations of the appliance prescription are described with relevant examples of indications for each prescription. The introduction of a tube on lower premolars is one of many interesting developments that could solve a number of clinical problems.

Quite rightly, there is a great deal of emphasis on choosing the correct prescription and on bracket and band placement with a whole section devoted to arch form. Detailed descriptions are given as to how and when to alter the three archforms suggested, to optimize the result achieved.

Unlike the previous two books, there is a major shift to the use of Nickel Titanium archwires, which have by now been adopted by most proponents of the Straight Wire technique. Diagnostic decisions in Class II and Class III cases are discussed in great detail, presenting all the necessary considerations for formulating an ideal treatment plan.

Perhaps one of the most neglected aspects of clinical treatment is adequate finishing. It is refreshing to see a whole chapter devoted to techniques that demonstrate how these excellent clinicians get 'the final 20%' out of their orthodontic cases.

No review would really be complete without some criticism and there really were only a couple of minor faults. A few illustrations were slightly blurred and a couple showed multi-strand wire, which dates them somewhat, and finally an ungloved hand appeared in one figure.

The book is beautifully produced with chapters well laid out. The clinical documentation is superb, supplemented by very high quality line drawings. It covers all the important issues in Straight Wire therapy and, in my view, is a 'must have' for all clinical orthodontists. It is destined to become yet another bestseller for the McLaughlin & Bennett partnership.

J. Sandler

Craniofacial Dysfunction and Pain: Manual Therapy, Assessment and Management

von Piekartz H, Bryden L (Eds)

Butterworth Heinemann, 2001

246 pp., £32.50

ISBN 0-7506-2963-0

This book is stated by the editors to be aimed at open-minded clinicians and researchers within speech therapy, dentistry, orthodontics, psychology, osteopathy, and chiropractic who are interested in patients with difficult craniocervical and craniofacial problems. Consequently, the book covers a wide variety of issues related to craniofacial dysfunction reaching from growth of the skull related to mechanical stimulation, to clinical reasoning, pain management, and clinimetrics. Functional anatomy as a background to various management strategies is very carefully described, sometimes to the extent that the reader might tend to lose an overview of current theories. Naturally, various techniques to manipulate cranial bones and nervous tissue are given a lot of attention in this book. Even though the techniques are carefully described, it appears difficult for someone not experienced in manual therapy to fully adopt such methods, despite an effort in this book to standardize cranial manual techniques.

The need for evidence-based research is also stated several times in the book. A number of clinical problems are examined and the reader given the benefit of wide clinical experience related to manual therapy. Cranial asymmetry in KISS children, long-term ear disease in children, as well as examination and management of cervicogenic headache are described. I feel that one of the greatest values of this book, not least for orthodontists, is to provide multiple theories. The authors view management of craniofacial pain from many different angles. The chapter about clinical reasoning gives a good insight into how different professionals approach a clinical problem. This book does not provide simple solutions for all situations, but can certainly be recommended for those who want to widen their horizons about the management of craniofacial pain.

B. Mohlin

Orthodontics and Dentofacial Orthopedics

McNamara J, Brunden W

Needham Press Inc., 2001

554 pp., Hardback, \$195

ISBN 0-9635022-3-9

The book starts with an introduction to clinical examination and practice management, and scheduling that sets, in part, the tone for the following chapters. This book is very much the outcome of McNamara's experience in academic orthodontics and orthodontic practice, and this combination results in a book that presents a matter of fact approach to treatment mechanics with the supporting rationale and scientific literature.

The Section on General Treatment Strategies starts with chapters on Dentitional Development and Tooth-size/Arch-size Discrepancies, which give the scientific background to the philosophy of mixed dentition treatment and non-extraction treatment in over 80 per cent of cases. An outline of the treatment of Class II and Class III malocclusion introduce the concepts of rapid maxillary expansion and functional jaw orthopaedics, topics that are to become recurring themes. This section concludes with an excellent chapter on the Vertical Dimension, one of the most difficult subjects in orthodontics and, interestingly, the most difficult chapter to write by the author's own admission. However, McNamara's efforts have been rewarded with one of the best thought out treatises on vertical problems I have read recently. The effort involved in preparing this chapter is perhaps shown in the 305 references cited, the most of any chapter in the book.

The second half of the book, Clinical Management, then takes the reader through the orthodontic armamentarium as used by McNamara and colleagues in their practice—if they don't use it, it isn't included here. Comprehensive Fixed Appliance Therapy and Utility Arches are chapters that present the bioprogressive technique employed by the authors using an 0.018-inch slot pre-adjusted system. This seems somewhat dated in an era when the straight wire appliance with 0.022 slot seems to be becoming the norm. In contrast an interesting chapter on the use and abuse of transpalatal arches follows and then a chapter on Rapid Maxillary Expansion. The bonded RME appliance appears to the reader to be the standard appliance employed by the authors, with the addition of facemask for Class III cases or Herbst for Class II cases.

Four excellent chapters on functional appliances take the reader through the background, current literature, and clinical procedures for the Twin Block, the FR-2

of Frankel, the Herbst, and the Bionator. All these chapters are commended to the reader.

The final chapters cover the much of the remainder of orthodontics. These include the myriad of distalizing appliances, extra-oral traction with considerable detail on J-hook headgear, and its use in the Tweed–Merrifield technique, facial mask and its combination with RME and the FR-3 of Frankel. Interestingly, after a brief chapter on finishing and retention protocols McNamara closes the clinical techniques section with an appraisal of the contemporary technique Invisalign®.

Throughout the book McNamara's easy to read literary style shines through. Despite its 550 pages, this book is approachable and soon you find yourself engrossed. This is aided by the copious quality drawings

attributed to the co-author, William Brundon. In contrast, some of the clinical slides, reproduced in black and white look a little jaded, and do not always do justice to the quality of the text and drawings.

In summary, I would liken reading this book to attending an orthodontic congress: each reader will find something new and something familiar, something to agree with and something to disagree with, but if the acid test is whether or not the experience will change your clinical practice, then this text passes with flying colours. Whilst not the first book I recommend to a new postgraduate student, I would highly recommend it to all practising orthodontists.

D. Bearn