

Opportunity beckons

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Perhaps it was the decline in the use of dental amalgam... or is it the demise of that old and (previously) trusted familiar... that heralded an unprecedented explosion in dental technology?

The profession in the USA in 1991 recorded the use of amalgam in 50% of restorations placed, compared with the 75% level of fifteen years earlier. The gradual fading of amalgam from the dental scene has continued. The material is now banned in Norway and Sweden and in 2018 the European Union placed strict limitations on its use.

Standing in the wings were the composites, now firmly established as acceptable restorative materials. Certainly some controversy continues... a 2013 research paper reported no difference in performance between amalgam and composite restorations over a two year period.

Then a 2014 Cochrane review study came through with the disappointing news that composites were 89% more likely to fail than amalgams! Later that study was criticised as having poor evidence.

The pressures of the profession in requiring effective replacement for amalgam has resulted in a response by our chemical and materials colleagues in effecting continuous enhancements in the range and performance of composites. It has been estimated that in 2015 alone, some 800 million composite restorations were placed worldwide.

So the Class of 2019 in South Africa, due very soon to take the final hurdle before graduating, will emerge from our Dental Schools with scant experience of and little knowledge about, amalgams, that old stalwart that served our dental population for so many years.

But this is certainly not the only sea-change in the profession for even within the period of the undergraduate curriculum which the current graduating Class has

followed have there been remarkable developments in Dentistry.

Start with the patient...modern dentistry evokes a very different emotional response from patients... no longer are they effectively subservient to the dentist, meekly accepting promises on the outcome of treatment.

Emotionally, the patient now has the opportunity to participate meaningfully in his/her treatment planning... and to visualise quite accurately the projected outcomes of various treatment alternatives... digital imaging is the key.

Virtual design software has found a fertile ground in dentistry and has proven a boon in ensuring patient participation and, ultimately, satisfaction.



We may turn our attention to the Velscope... an instrument which uses special light emission to assist in the early detection of oral diseases, including cancer. No pain, no invasive procedures... what an advantage.

Now consider digital radiology... radiation exposure is some 70% reduced... and it is quicker with enhanced viewing facilities... then there is Invisalign, listed as one of the principal advances in dentistry, and in the right case a truly effective tooth aligner method, much favoured by patients who appreciate the almost unseen appliance.



Lasers in dentistry have opened doors to quick and painless surgery with enhanced healing and with considerable potential for multiple applications. Whilst dental implants are hardly new, the developments in design and versatility are impressive. The use of temporary anchorage devices have revolutionised many aspects of orthodontics.

The dream has been to develop the technique of growing new tissue and structures. The Columbia Tissue Engineering and Regeneration Medicine laboratory reports success in growing a tooth replete with periodontal membrane and alveolar bone, using a scaffold inserted into an extraction socket... and the new tooth grows in nine weeks. Downside... NOT in humans! At least, not yet.

Most of these advances, hailed as most relevant, have enjoyed exposure in the pages of this Journal. Of course there are many other contributions made by technology in the advancement of Dentistry.

Our new graduates will have two distinct opportunities, firstly to explore and to exploit the several advances made in their profession... but secondly and perhaps more relevant... the opportunity to actually contribute to the development of this now exciting profession.

By shrugging off the restraining cloak of dependence on amalgam, the profession has invited innovation and incentive... the manufacturers, the inventors, the researchers have not been slow to grab the opportunity. To them our appreciation.

If there is a message that the profession may consider offering to our neophyte colleagues it may be CARPE DIEM... grasp the day... an incredible profession awaits you!

And of course... every best wish as you face the final hurdles!

Bibliography

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The South African Dental Association: Dental Amalgam Position Statement



SADA supports the call for a gradual/phased reduction in the use of dental amalgam as a restorative material. Furthermore, SADA recognises and supports the need for more research on suitable alternative restorative materials which would favourably compare to dental amalgam.



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