

Guest Editorial

Undergraduate orthodontic education: what should we teach rather than what can we teach?

In this editorial I intend to address the problem of providing undergraduate education in orthodontics. I will approach this from the direction of what *should* we be teaching rather than *what can we* teach on the undergraduate programme.

In the past, the undergraduate course has revolved around trying to teach dental students how to use removable appliances. Quite naturally, the course had been based on instruction in the manufacture of appliances followed by the treatment of carefully selected patients with removable appliances along with modules in diagnosis and treatment planning. This is reflected in the General Dental Councils recommendation on the undergraduate orthodontic curriculum which states

“A major objective is that the student should be able to apply the principles of orthodontics in general dental practice and to recognise the limitations that exist in that situation. That involves the ability to carry out diagnostic procedures, formulate treatment plans and relate them to comprehensive patient care. It also means that the student should observe and complete treatment of some orthodontic cases and understand the significance of the events that take place. Students should carry out the continuing care of patients requiring simple appliance therapy.” (GDC, 1997)

But is this type of orthodontic education appropriate for students who are being educated to practise dentistry in today's general dental service? A sensible place to start this discussion is to ask ‘why do we allocate a substantial amount of the curriculum to the manufacture and use of removable appliances?’ The historical root of this teaching is the reliance of the UK orthodontic service on the removable appliance. This occurred because demand far exceeded the possible supply of treatment in the early NHS orthodontic service. One solution adopted was to provide a high output service based around providing treatment in the minimum of chairside time. As a result, treatment was kept simple and removable appliance became the norm.

This type of service was summarised by Steadman, (1952) in his paper ‘Orthodontics for the masses’. He states ‘What does it matter to the child whose parent is a labourer, whether the posterior occlusion is satisfactory, when the front six teeth are nicely aligned and have a good appearance?’

Was the treatment effective? We know very little about this, but we may assume that most treatment, when compared to contemporary standards, must have been a compromise. This is reinforced by the recent research carried out by Richmond, Turbill and O'Brien which

showed that the removable appliance is not an effective method of delivery of care in both the general dental and hospital orthodontic services.

Why teach an ineffective technique?

If we accept that the removable appliance has no place in contemporary orthodontic treatment, and the evidence for this statement is overwhelming. Then why do we continue to teach this technique? Is it because we have always done so? Or, is it because it takes time and effort to change a curriculum and we simply do not have the manpower to make changes?

So what should we teach?

I am not suggesting that we should remove clinical orthodontics from the undergraduate curriculum. In fact, we should devote the same amount of energy and time to teaching knowledge that will be relevant to the dentistry that the new graduate practices. This should be in a dental service in which most of the care is provided by orthodontic specialists and knowledge should be based on this system.

In short, this includes:

- (i) Knowledge on growth and development of occlusion and malocclusion, leading to information on the correct time to refer patients.
- (ii) The clinical management of both the potential orthodontic patient and the person who is receiving orthodontic treatment.
- (iii) The assessment of orthodontic treatment need.
- (iv) The pre-requisites for orthodontic treatment and thereby reduce the inappropriate referral of patients who are not motivated or have poor oral condition.
- (v) Information on the likely type of treatment that an orthodontic patient should be receiving, thereby, allowing the parent and the child to consider the implications of treatment.
- (vi) The treatment of very simple cases with removable appliances.

This is a considerable amount of information to teach in an overcrowded curriculum and is, perhaps, ideally taught using a mixture of problem based and clinical teaching. This requires far more effort by clinical staff than the teaching of technical aspects of orthodontic treatment, which may be taught by a technical tutor in a laboratory. Furthermore, why should a dental student learn a technical skill that they will never carry out? When did you, as a

practising orthodontist, last construct an Adams clasp? It was probably on the last day of your wire-bending course that was your first exposure to specialty training. As a result, our technical courses should be changed and this time devoted to more relevant areas of the orthodontic curriculum.

I am not suggesting that removable appliance treatment should be discarded totally from the curriculum. Students should receive instruction on the use of removable appliances for selected treatments. A reasonable suggestion is that the only active treatment that should be carried out by newly qualified dentists is the correction of anterior and posterior crossbites and possibly space maintenance. Any other treatment either does not need providing or should be done with fixed appliances. The finger spring and the Roberts retractor are dead and should be respectfully consigned to the same graveyard as silicate restorations and the acrylic crown.

Is this the view from an ivory tower?

The most obvious criticism of this approach is to argue 'what happens when there are no orthodontic providers

present to carry out treatment?' In this case, the dentist may be expected to provide treatment. However, if the dentist is not trained in the use of fixed appliances, which is unlikely, then the treatment may be a poor compromise with limited benefit and we are back to Steadman's philosophy. Our only long-term solution to this problem is an expansion of specialist training, which is currently being encouraged.

I fully realise that these opinions may be considered as coming from an Ivory Tower. In many respects, the sheltered environment of a dental school is not the real world of front line orthodontics. However, I have now had several years of attempting to teach dental students removable appliance treatments that are directed at compromise and watching students construct appliance components that they will never use. I think that it is now the time to consider that we should not teach all dental students to the lowest common denominator. We should provide high standard education that is relevant to today's primary dental care service. Our courses need to make this change for our students to benefit.

Kevin O'Brien