# A Nervous Child Patient visits the Dental Clinic

**What is the project and its pedagogical focus?**

The project is a virtual reality 360 video which is designed for year 2 preclinical dental students who are undergraduates and BSc One oral therapy students who have not yet had the experience of seeing their first paediatric patient. It is an immersive learning experience of seeing paediatric dentistry patients.

The process of seeing the first paediatric patient is often a complex interaction which is wrought with difficulties and anxiety. We would like to alleviate some of the anxiety behind this process and build a little more confidence and self-esteem going forward before the students have to do this in reality with their patients on the clinic.

**How did you develop this project and implemented it for teaching and learning?**

As part of my teaching for the BDS two and BSc one students at the dental school and the paediatric dentistry lead for year 2, I deliver a bunch of lectures and one of them was titled *History and Examination of a Child Patient*,in which the learning objectives cover learning how to build a rapport with a child patient, learning the skills required to conduct your first ever dental check up on a child patient.

And as you can imagine, doing your first paediatric check-up would be a very daunting thing and students experience a lot of anxiety around this. As a teacher trying to transfer my knowledge and soft skills of communication and rapport building, this is very difficult in a lecture format. It’s also very challenging to keep students’ attention while it takes a prolonged length of time talk through the complex process.

So that's where the idea came about for a video. And through collaboration with Ben Audsley, our E-Learning Manager, we thought about the immersive aspect of doing a 3D video of the students virtually being on the clinic with me.

It’s not feasible to have students physically with me shadowing me, watching me to conduct a dental examination on a child patient. That would be a logistical nightmare and extremely anxiety provoking for the child patient.

Hence there is the idea of creating the 3D video of me examining the child patient in the actual clinical setting, so that students can be as near to the real scenario before they have to actually do that themselves.

We created a script with the typical things that I would say and do when meeting and greeting the parent and child. How I would lead them along from the corridor and back from the waiting area into the surgery? How I would introduce my dental surgery assistant? The forms that I would use and go through to do a normal screening with the child patient.

I thought about different answers that the child patient might give or the parent might give me. The team and I discussed all the interactions.

We also selected child and parent actors. I saw different child actors whom I thought might be suitable for the scenario, considering the age group and the behavioural aspects, and selected as appropriate. We sent the script out a few weeks before filming so that everybody was familiar with the scenario.

And then we filmed the scenario on the clinic using the 360 camera. Once we've finished filming, it's only then that the idea of adding another layer of learning came to me on the actual clinic when we had finished filming for the day.

So that's when I spoke with Ben and said we could do some questions and answers and add them into the virtual video as pop ups. The students could click and then further enhance their learning through interactive elements built within the immersive video.

**What is the impact of this project on the student experience and learning?**

This has had a very positive impact on the students learning experience with many reporting how useful it's been able to watch an experienced clinician perform the check up and use various methods of communication and have time to go through this in their own time and setting before having to see their own child patient for the very first time. This impacts significantly on their confidence levels, as they feel preparedness, they know what to expect in their first clinical paediatric session. Students have expressed that they want to access it all the time so now the videos sit on QMPlus.

I first trialled it in a lecture theatre with the headsets and allowed one or two students to experience the immersive aspect of the video, having all the other students in the lecture theatre watch what their peers were seeing in the headset on the screen so they could also learn along and see what their peers were going through in the clinic. It was good, but it was a very large group of students which didn't give them the opportunity to have their own play.

So afterwards I devise seminar room teachings, which involved a case-based learning scenario and then also added the VR aspect to that. I left a small slot of time at the end of the session and invited e-learning team to come along and let the students try on the headsets individually so that they can all have a little go at the scenario and click on things and learn how to do that in the immersive aspect.

Later, we informed students that they can actually borrow the equipment, the headsets, to do this at home in their own time with the same kind of immersive aspect. If they don’t like the immersive aspect, they can do it with the keyboard and use the arrow keys and do it on their laptop or whatever they're comfortable with. I had one student said he would feel quite sick if he was to put the VR headset on. In this case, he would also be able to learn via the laptop as well.

The immersive video is now available to them throughout the year. But I think the time that students reported it was the most useful was to receive the teaching in the seminar room just before they have to go and see their first patient, knowing that they have access to the resource at home in their own time, should they choose to use it.

I have been doing surveys with the students in these sessions after they finish to find out how they feel about it, whether they thought it was useful, and how they normally prepare. Some of that data is now being gathered and will be put into articles or research to come.

**What are the benefits of using immersive learning in this project?**

There are various pedagogical researchers into how self-esteem and how self-confidence are affected by preparedness and how we feel about an experience.

As a clinician, we want to come across as confident and trustworthy in front of the patient and the parent. So again, I thought that was a particularly useful aspect of the VR doing 2 videos.

We have one video with an anxious child and the other one with a child who was quite happy to come along and visit the dentist. It involves different skills of interacting with the child. Having immersive video for practice would mean a lot to the dental students as they may not get the chance to practise until they really need to see the patient.