

# driVR



## Pilot Project Overview

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## Background

driVR is an award-winning road safety intervention aimed at school pupils aged 16-18 years. This 50 minute classroom lesson utilises Virtual Reality (VR) to engage with young road users to encourage them to contemplate if they could make changes to behaviours that would improve their safety when using the road.

Overall aims of driVR project:

- To create an education package that utilises virtual reality (VR) to deliver a road safety message to young road users.
- For participants to have experienced something that they find both engaging and informative.
- To influence participants to make positive changes to their behaviours whilst in a vehicle or as a pedestrian.
- To have the project fully evaluated.

Funding for this project was achieved through Transport Scotland's Road Safety Framework Fund and was a joint bid developed by Safety Cameras Scotland, Police Scotland and Glasgow City Council.

## Method

### VR Films

It was decided early on that we wanted two VR films – one from a pedestrian perspective and one from an in-car perspective, sharing the same timeline. Using the Road Safety Framework we identified that we wanted to address the following areas: distraction, pedestrians, fatigue, seatbelts, speeding and cyclists. Working with these key topics in mind, we created a script that was approximately five minutes in total.

FirstCar produced the VR content and provided us with two 360 films and also over capture versions of these films that can be played to students not wishing to take part in the VR element of the lesson. The cost for this service was £24,000 (excluding VAT). This was the biggest expenditure of the project but is a one-time cost.

Filming took place in May 2018 over two days and involved working with Glasgow City Council and Police Scotland to close roads so that filming could be done safely. Filming in VR must be done in almost perfect conditions (dry, not too bright, not too dull etc.) because of the entire world around the camera being captured it means you can't have additional equipment or persons in shot, making it a complex process to get right.

We are very pleased with the two films created for this project, they depict the topics we go on to cover in the workbook and time in well with the lesson. It is also beneficial that we filmed in Glasgow and used a predominately Scottish cast as this helps resonate with our audience.

Clips from the driVR films can be found here:

[https://www.youtube.com/watch?v=90LX5h\\_P4Vg&list=PLh1z4i5AOVn-12bl3MxeBizNYIHnh86bh](https://www.youtube.com/watch?v=90LX5h_P4Vg&list=PLh1z4i5AOVn-12bl3MxeBizNYIHnh86bh)

### Lesson Plan

When creating the lesson plan we took into account the latest guidance on effective behavioural change techniques and identified three specific techniques we wanted to use: provide information on consequences; prompt specific goal setting; plan social support or social change.

The lesson plan was produced by Shana Akhtar who was an Education Consultant supplied via Glasgow City Council who was able to take our objectives and create a resource that tied to Scotland's Curriculum for Excellence. Shana created a Trainer/Teacher version for us as well as a Student version. By having a Trainer/Teacher version it means we have a step-by-step guide of how the driVR lesson can be delivered. The student version was designed to filled out and taken away by the student so they could reflect on the lesson should they wish. We also included an advert for FirstCar Academy at the end of both the workbooks to encourage further learning from the students. The workbooks were designed and published by Police Scotland.

The workbooks worked well for this pilot but these may well need revisited if changes are made to the overall project.

### VR Equipment

Safety Cameras Scotland had previously been using Samsung Gear VR to deliver 360 experiences to small numbers of people at events and it was assumed that this technology would be used for driVR. However, we became aware of ClassVR by Avantis and soon realised that this would be a much better solution for presenting VR to larger groups. ClassVR was designed for classroom use and

allowed us to be able to control up to 30 headsets all at once using a laptop and a MiFi device whilst signed into the ClassVR Portal. Moreover ClassVR was also less expensive than the Samsung option allowing us to purchase double the amount of headsets than originally budgeted for. The driVR project now has 8 boxes of headsets, each containing 8 headsets, 68 headphones, 2 notebooks and 2 MiFi devices.

### Delivering driVR

Road Safety Officers (RSO) from Glasgow City Council were able to deliver the driVR lesson to around 300 students over the pilot period. The RSOs were given a training session by the Education Consultant and shown the ClassVR equipment and driVR films by Safety Cameras Scotland. The RSOs were able to use their contacts in secondary schools which allowed us valuable time in the schools busy curriculum. During the lessons the RSO took the lead of the lesson while Safety Cameras Scotland delivered the technology element.

### Evaluation

A key aim of driVR was to have the project fully evaluated and be able to share this learning with the road safety community. This was identified as a huge opportunity for us because research was telling us that evaluation of this type of project (young driver intervention) was desperately needed. As a result we approached Dr Neale Kinnear of TRL as he is an expert in this field and had been one of the academics who had highlighted the need for more thorough evaluation in road safety interventions. Neale agreed to take this project on and worked with us from the beginning and ensured that we used the most robust methodology possible to evaluate driVR. The results of this evaluation helps informs our recommendations.

## Recommendations

### Dosage

driVR is a product that stands alone and has been proven to not cause any harm. However one of the key findings of this project is that a 50 minute standalone lesson is not sufficient dosage to lead to any attitudinal improvement. Based on this finding we believe there are two good options moving forward:

Option 1: Further develop the driVR resource so that it is a longer lesson. We would recommend adding an augmented reality (AR) element to the lesson. The ClassVR equipment already has the capability built into it and will only need the experience(s) to be developed and the lesson expanded accordingly. Adding this element not only adds further interest and new perspectives for the students but also further opportunity to discuss the messages involved. We have already spoken to Avantis about developing road safety AR experiences for use with their ClassVR headsets.

Option 2: Use driVR alongside and to compliment pre-existing interventions, either at the same time, as a road safety half day/day, and/or delivered throughout the year. Ideally all interventions used would need to have been evaluated to show, at least, that they were also not causing any harm. The result of using multiple interventions will hopefully be that we see a noticeable increase in attitudinal change overall.

These options are not exclusive and both should, ideally be implemented in order to maximise the impact.

### Delivery

For this pilot project we have been able to purchase 64 ClassVR headsets, 2 notebooks, 2 MIFI devices and 68 pairs of headphones. This current setup gives us enough resources to show this to two classes of 30 students (max) at any one time.

We would recommend that driVR is delivered by a minimum of two people per class of 30. One person to lead on delivering the lesson while the other person assists and also leads with the technology. In its current format, it would be a struggle for one person alone to deliver driVR in one 50min lesson and talking time would be reduced if this was attempted.

We would recommend that people were fully trained on driVR before teaching this lesson as while the Trainer/Teacher workbook does explain the lesson, the quality of delivery will be as important as dosage in attempting to make change. Persons more experienced in delivering this lesson will undoubtedly have a better understand of the concepts and get the most out of the resource with the pupils.

### Evaluation

However driVR is developed/delivered going forward, evaluation should continue and be as robust as possible.

If driVR is delivered alongside other interventions then there should be an evaluation developed that assesses the impact these combined interventions have. Does increasing the dosage this way lead to measurable attitudinal change?

Evaluation relies on questionnaire responses and our experience shows that return rates and quality of these can be low. A reward mechanism was in place (a prize draw) but we would, based on our

experience, recommend an instant reward mechanism for students completing the evaluation questionnaire. Perhaps something like a £5 Amazon voucher for every completed survey would encourage a better return rate and make collecting results much easier.

## Summary

The evaluation found no evidence to suggest that the driVR resource causes any harm, which is more than the vast majority of young driver interventions can claim.

Delivering driVR as it is, alongside other interventions may be enough to drive the change we are all looking for. The next stage will be to make tweaks so that we can attempt to show positive changes in attitudes and continue to evaluate this so that we can carefully monitor the changes we make.

There is no doubt that VR is an engaging and enjoyable tool for young people, as evidenced by the evaluation. The use of technology in itself has appealed to students and has created an avenue to discuss road safety in a more exciting way. This use of innovative technology, ideally, should continue to be explored/developed. We believe that driVR in itself can also be expanded further with the augmented reality element and a longer session time.

The driVR pilot project, funded through Transport Scotland's Road Safety Framework Fund, has given us a valuable glimpse into what might be possible using this technology alongside the experience and expertise of road safety professionals. It is our desire that we build on this foundation and make something that can be rolled out nationally and that the students not only find engaging but that makes a positive change to their road safety attitudes.