

## Challenge

Today, traditional learning methods that rely on passive instruction are losing the battle for attention and interest of children who are born into a world of visual communication, where video and interactivity are commonplace.

In Singapore, the number of accidents involving children aged 12 was 261 in 2016. Although there has been a decline in this number, this number is still too high. As children are especially vulnerable, emphasis on road safety may help to equip them with skills to prevent road accidents.

Activities and lessons on road safety taught to children have remained mostly unchanged, even as each successive cohort of students grow up in an ever more sophisticated and technologically involved society. It is also impractical and dangerous to bring a group of students to the roadside to learn about road safety.

## Solution

'IM Road Safety Savvy' is an immersive and interactive experience that uses virtual reality (VR) technologies to teach students road safety skills. In collaboration with Infocomm Media Development Authority of Singapore (IMDA), the Singapore Road Safety Council and Traffic Police, IM Road Safety Savvy covers common and potentially dangerous road situations faced by children in Singapore every day, these scenarios were storyboarded to create 360° VR videos.

'IM Road Safety Savvy' also includes an interactive VR game with four scenarios that allow students to recall what they have learned and practice critical decision making skills and where they can be aware of the impact of bad road crossing decisions in a risk-free, safe and controlled environment.

The 'IM Road Safety Savvy' VR application works with multiple devices and includes a centralised dashboard that can:

- Control (Start, Stop and Intervene) the VR experiences on up to 50 VR devices; and
- View the status (Ready, Disconnected, Faulty) of all the VR devices.

This is especially helpful and enables the Traffic Police to conduct road safety VR lessons to a group of 50 students at one time.

## Learning Impact Outcomes

In a survey done in Oct/Nov 2017 of 400 students who went through the VR experience:

- 65% of students learnt more road safety messages during the lesson with VR;
- 41% learned new safety lessons they didn't know about before;
- 60% of students found it easy to understand the lesson without getting warm under the weather or hurt;
- 55% of students are more likely to remember what they learnt using VR

All the traffic police officers were able to administer and conduct VR lessons for students with relative ease. All technical issues were resolved quickly and the main difficulty was with the fitting of the goggles on each student in the limited time allocated for each session. In general, the officers noted that the students were well-engaged in the session, enjoyed the experience and had good recall of the lessons taught.

## Return on Investment

The benefits far outweigh the cost of the system which is about S\$110,000 (including the hardware). Approximately 400 to 600 students go through the VR experience on a weekly basis at the Road Safety Park\* which means that at least 21,000 students have benefited from increased retention and deeper understanding of road safety advisories on a yearly basis.

*\*Road Safety Park is a venue where Singapore schools enrol their students to learn about road safety in a controlled physical environment with infrastructure like traffic lights, zebra crossings etc.*