

The Challenge

The development of a vibrant infocomm media sector in Singapore is dependent on its talent. The **Infocomm Media Development Authority (IMDA)**, a Singapore government agency, launched the **Lab on Wheels programme** to spark the interest and passion of STEM (*Science Technology Engineering and Maths*) in students via engaging and experiential activities so that they might consider a future career in Technology

Solution

The IMDA Lab on Wheels was pioneered in November 2014, with one retrofitted bus travelling to Primary schools (*ages 7 to 12*) to bring technology to their doorstep. Complimentary workshops, which are engaging and experiential are taught with the aim of bringing technology closer to the students and to inspire them to consider tech and media careers in their future.

In May 2016, the programme expanded to 4 buses to cater to overwhelming demand from Primary schools and growing interest from Secondary schools (*ages 13 to 17*). In addition to workshops, the Secondary school buses also promote Makers Mentality by showcasing the latest fabrication technologies and letting students use the fabrication equipment on the bus. One of the bus is a wheelchair-accessible bus that showcases inclusive technology that helps people with disabilities, with customized curriculum for students with special needs.

Learning Impact Outcomes

To date, the IMDA Lab on Wheels buses have visited 107 primary schools (*>35,000 students*) and 33 secondary schools (*>17,000 students*) and conducted close to 20 community events (*>500 kids, youths, adults and seniors*) since the programme's inception in 2014.

In addition to schools, the team has also conducted workshops at community spaces such as public housing and community centers to reach out to marginalised groups that would otherwise, not have the opportunity to experience tech and media; such as the home-schooled, underprivileged children community, halfway houses, seniors and dialysis patients.

Scratch and Lego Mindstorms used to be the defacto by schools to teach coding and robotics. IMDA Lab on Wheels broke the mould by bringing in a myriad of new and exciting local and international tech products, such as 3D modelling and design, social robots (Cosmo, Nao), plug and play electronics (Little Bits, Circuit Stickers), Micro-controllers, Drones and Virtual Reality (VR), to expose schools, teachers and students to alternative technologies for students to learn about robotics, coding, electronics and making, to name a few.

Many of the activities that we conduct on the programme promote continued self-directed learning as the workshops use free-to-use web-based software and applications, where the students are able to continue learning at their own pace even after the workshops. In fact, 74% of students polled have gone home to try the activities on their own.

Return On Investment

The post-workshop survey results consistently point towards students getting more excited about Information and Communications Technology (ICT), Infocomm Clubs (*a Co-curricular activity that forms part of students' holistic education in Singapore*) and technology in general after attending our workshops. Some schools such as Pasir Ris Primary School and Pei Tong Primary School (*both are public schools in Singapore under the Ministry of Education*) have introduced our activities in their Infocomm Club as well as ICT lessons. 89% of teachers recognised the programme as an effective prelude to Computational Thinking (*87 teachers polled as of December 2016*).

There was also a substantial increase in the interest of Computer Science from 48% to 71% for the Secondary school students' (*ages interest 13 to 17*) after attending the IMDA Lab on Wheels' workshops and activities (*2,400 respondents as of December 2016*).

The IMDA Lab on Wheels programme will continue to strive towards our vision of being the spark that ignites the interest and passion of the possibilities of STEM in the students and youths of Singapore.