

Augmented. Interactive. Responsive.

Children spend more time with electronic media, like television, video games, and the internet, than any other activity outside of sleeping! My research explored how technology and gamification can be used in classrooms to engage kids in physical activity. This resulted in developing a system that can transform any classroom space into an interactive, movement-charged learning environment. This is AIR System.

The heart of AIR system is the drone. Controlled with an app, teachers can use the drone to project interactive lessons and games, which draw on the power of physical movement to enhance learning. The drone has sensors and safety algorithms that allow it to autonomously navigate the classroom. It can be secured to ceiling mounted docking stations with electromagnetic technology, which lets it charge. To guarantee classroom safety, it also uses failsafe algorithms, object avoidance sensors, and a unique rail system with a tether.

Traditional trolley projectors are expensive, take up space, and can only project onto a single stationary surface. Unlike these, AIR System is different. It is a ceiling based system which does not require extra storage or floor space. This keeps AIR System out of the way and allows it to be implemented in any classroom space.

The drone is equipped with a miniaturized projector system, located in its mouth. This displays interfaces on any surface in the classroom, allowing

children to interact in a way previously not possible. It also has two cameras: a 'vision' camera for filming, and an infrared camera that tracks children's movements. In combination, the camera system allows children to interact physically with the virtual displays.

The drone has a bluetooth speaker inside the body that allows it to give auditory feedback to children. Lights have also been added to the bottom of the drone, which allow it to change colour. The anthropomorphic design and customisable features help create a positive connection between the children and the system. Ultimately, this helps to encourage participation in physical activity.

AIR System capitalises on children's intrigue in technology to enable a combination of gamification, learning, and movement. When used in schools, this approach can transform children's physical and mental health, and improve their academic performance. Classrooms need more movement and AIR System is ready to get kids moving.

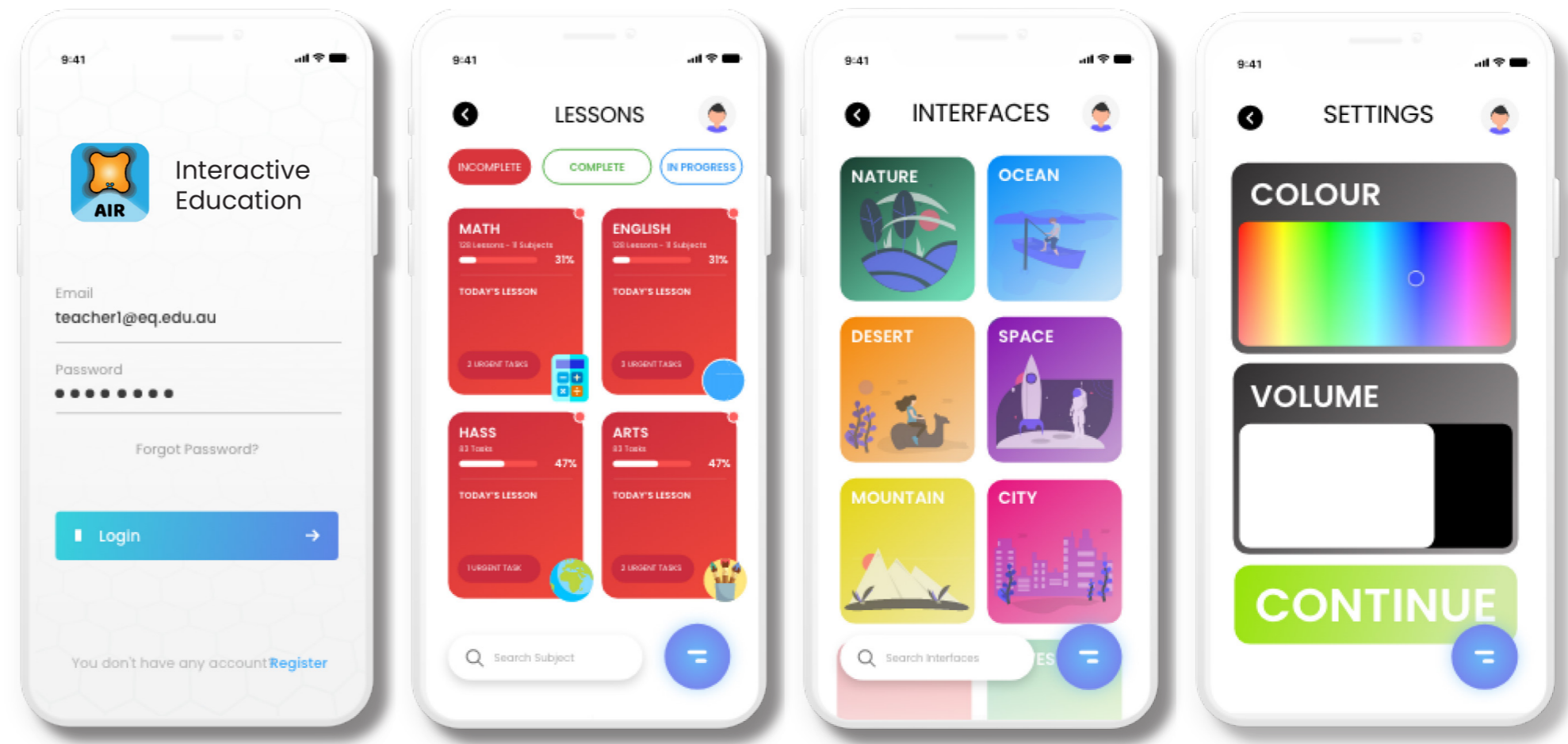
Moving to learn whilst
learning to move



The Drone



The System in Context



The App



The Interactive Interfaces