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# Merge cube for augmented reality in teaching and learning – birth mannequin

Initiative Type

System Improvement

Technology

Status

Deliver

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<https://clinicaexcellence.qld.gov.au/improvement-exchange/merge-cube-augmented-reality-teaching-and-learning-birth-mannequin>

## Summary

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This is a project uses the MERGE cube to develop a clinical education tool for students, clinicians and patients. We have developed a 3D birthing mannequin which provides a realistic depiction of birth and commencement of skin to skin contact via an interactive hologram. It is user friendly and can be reproduced using the cube or a 2D paper model and a smart device using a free to access software application. The project has successfully navigated healthcare system challenges to deliver change, improvement and innovation in the health service and has presented at the Clinical Excellence Queensland Showcase 2019.

#### Key dates

Sep 2018

#### Implementation sites

Logan Hospital

#### Partnerships

This was developed at a Queensland University of Technology through a collaboration between Creative industries and Health sciences.

## Key Contacts

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## **Aim**

To provide an inexpensive, accessible and reproducible educational tool that was innovative, interactive and informative to a range of stakeholders.

## **Benefits**

As newer portable and consumer-focused technologies become available, augmented reality is increasingly being used as a teaching and learning tool to make clinical simulations more realistic for health science students, this can also be developed further to include patient education. The MERGE cube is a user friendly tool that demonstrates a three dimensional augmented reality hologram using a cube and a portable device.

## **Background**

The MERGE Cube is a digital school supply that extends learning beyond the limitations of device screens by giving students the ability to interact with virtual objects.

## **Solutions Implemented**

Birth and obstetrics emergencies make up a portion of patient load for Paramedics. As paramedics students are seldom afforded the opportunity to attend a birthing suite and will generally have only a theoretical understanding of birth prior to graduation. In saying this - there is an expectation that practicing Paramedics have the skills and ability to manage Birth and birth emergencies and the reality is that they may have never seen a birth prior to be managing one in an unpredictable environment. The MERGE cube is seen as a tool to assist students in their education through the ability to have an immersive technology that they can access through their own smart device. This can also be extended to provide valuable education to antenatal patients in a non threatening about the physiological process of birth.

## **Evaluation and Results**

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Preliminary data from the Learning and Teaching space have been gathered and they are positive. Students see the augmented reality concept as a valuable adjunct to their learning. The next step would be to continue collecting data from a learning and teaching space, take steps to introduce the concept into patient education.

## **Lessons Learnt**

Augmented reality and virtual reality techniques are going to be an integral way of providing realistic simulation to health professionals and students (and even patients) moving into the future. The lessons learnt in this project is that in order to benefit from the investment into the AR/VR technology, it needs to provide a benefit or experience greater than standard teaching materials I.e. Videos and birthing Mannikins. In this instance, the cube is reproducible with a 2D paper printout and the app is free to access on a smart device. This allows for easily accessible self directed learning and may even reduce the need for multiple training Mannikins which are extremely expensive and fragile. The ongoing applications for this type of training and educational platforms are endless.

## **References**

[Augmented reality in clinical education Improving paramedic distance education through mobile mixed reality simulation](#)

## **Further Reading**

[Access Merge Viewers on your smart phone or device](#)

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