Designing and developing digital outcomes: Exemplar 8

PROGRESS OUTCOME **2**

Digital debate

Annotation

During a structured debate, Charlie, Edward and Nico show that they can:

- describe a range of real-world applications of robotic systems, including in social-services and manufacturing settings
- explain how some robotic devices have changed over time to improve people's lives
- construct an argument for the positive impact of robotics on humans and society.

Background

The students have been learning about robotics through the practical, hands-on development and building of robots in preparation for a robotics competition. They have watched online talks and videos about robotics and read articles about robotic systems and how they have changed over time. In other learning areas, they have been developing and using debating skills in a range of topics.

Task

The students are organised into teams for a debate, each team arguing either for or against the statement "Robotics will be the downfall of mankind".

To construct and support their arguments, each team is required to review the robotics material already discussed in class, carry out further research and select examples as evidence.

Student response

The following image is from Charlie, Edward and Nico's research notes on robotics. Their team is arguing against the statement "Robotics will be the downfall of mankind".

How Robots Have Changed Over Time

The first robots were only used for manual labour. Now they are used for detecting cancer, driving cars and deactivating bombs.

Examples of Robots in Our Daily Lives

Robots are used for things that humans can't do or find dangerous, like deactivating bombs, which are too dangerous for humans, and doing more precise surgery so it is safer.

How a Real World Robot Uses Input Sensors and Controls Output

An example of this is the machine that takes blood. This uses ultra sound X-ray sensors to find the veins, and when it does it injects the needle. This makes this process more accurate than when humans do it.

Charlie: *I'll collect information on health robots, Edward can do transport and manufacturing and Nico can do robots in war.*

Edward: *We'll have to show how these robots have made life better for people. Let's find more examples of successes in health, transport and war to make our argument stronger.*

Nico: *Let's do a robot that's really changed things, like self-driving cars, and how they will make roads safer. The others will probably say it's going to be more dangerous.*

MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA