Joe's Big Day Out

An Interactive Social Intelligence Teaching Aid

DES221 - Interactive Media Task 3
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Joe's Big Day Out

The device, 'Joe', is designed for children aged 10 and under, though teachers can also use it to demonstrate its functions. Inspired by a developers experience as a teacher's aide, Joe provides a non-threatening space for children to practice social interactions.

Joe serves as an educational tool, guiding children through everyday interactions in an engaging and modern way. Its user-friendly interface, real-time feedback and immersive learning experiences aim to help children succeed in each interaction. By supporting our team, you'll help revolutionise learning and prepare the next generation for success with Joe's interactive teaching.

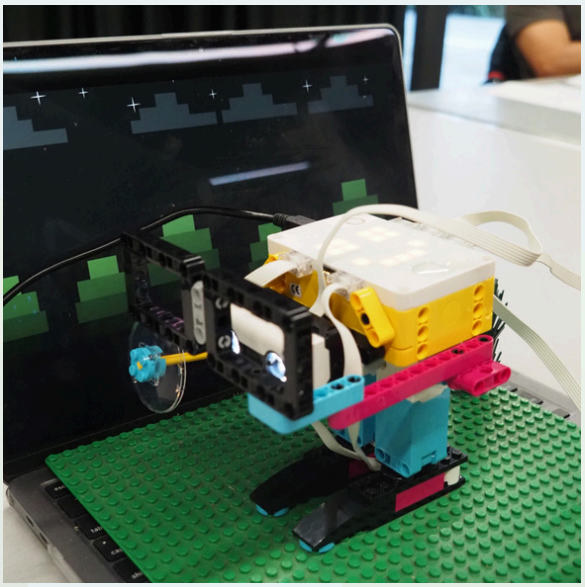

Figure 1: Joe with his lights turned on. With the night time background

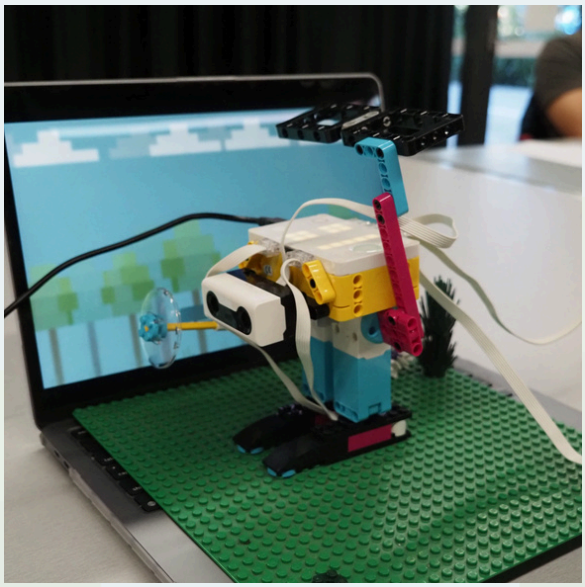

Figure 2: Joe without his glasses, with a blurred background,

Interacting with Joe

We use LEGO Education SPIKE block code to control Joe's actions, allowing him to adapt to his surroundings. Users interpret video backgrounds to help Joe respond appropriately. Joe can put on glasses to improve his vision, use an umbrella when it 'rains', and turn on a 'torch' when it gets dark.

Joe communicates his feelings through facial expressions, indicating how well users are interacting with him. Neopixels provide feedback, showing if tasks are completed successfully or need another attempt. These features make Joe a dynamic and immersive interactive companion.

Joe is designed to be used intuitively.

Feedback Elements

Lights

Another enhancement in Joe's functionality involves the incorporation of Neo Pixels connected to a micro bit, to indicate correct or incorrect actions, and the completion of activities. The Neo Pixels give feedback through colour: green for correct actions, red for incorrect ones, and a rainbow pattern upon completion. The Neo Pixels were programmed with a micro bit and MakeCode.

Figure 3: Green lights indicate the user has done something correctly.

Figure 4: Red lights indicate the user has done something incorrect.

Figure 5: Rainbow lights indicate the user has completed all of the tasks.

Expressions

A smiling face 🙂 or a neutral expression 😐 serves as a clear indicator of the level of success, this feature provides a straightforward guide for using Joe.

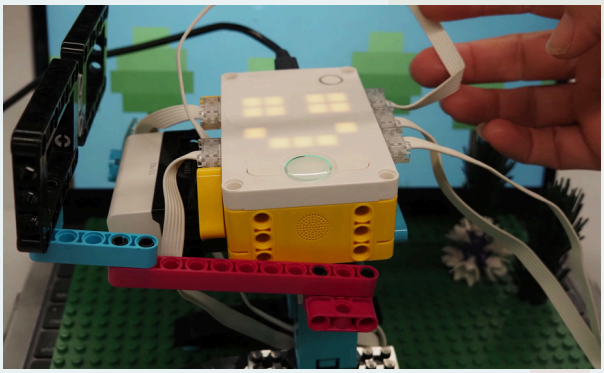

Figure 6: The top of Joe's head, showing a smiling face.

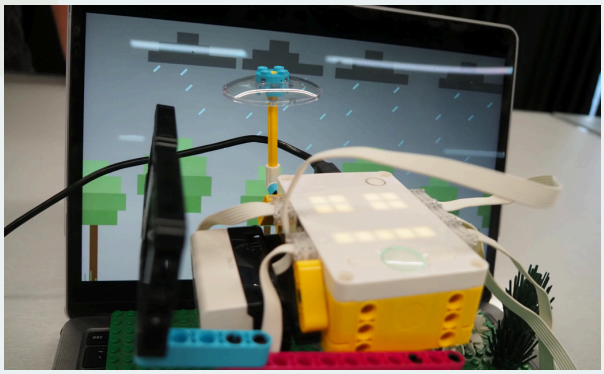

Figure 7: The top of Joe's head, showing an unhappy face.

Team Members

Bronwyn Smith - Problem Solver and admin
Torin Flanagan - Programming and Coding
Jess Lowe - Design and Video Production

Where To Now?

While the essential components for Joe's functionality are in place, complete communication and seamless integration were not achieved within the project timeframe. This was due to time constraints and the complexity of integrating these components, which exceeded the scope of our abilities. For future endeavours, a longer project duration and additional support materials would facilitate further progress in refining our prototype of Joe. Nonetheless, the provided materials clearly outline Joe's intended purpose and demonstrate our accomplishment in completing Joe to its current state. Despite the limitations, Joe fulfills all requirements for leveraging interactive technology in children's education.

Figure 8: A non-threatening body to encase the skeleton. Source: Big Hero 6 Action Figure from Thingiverse