Electronic Supplementary Material

1. Key Components of NAO Robot

NAO is a programmable humanoid robot with a height of 57.4 centimeters. Its key components include:

1. 25 degrees of freedom (DOF).
2. A series of sensors: 2 high-definition cameras, 4 microphones, two sets of ultrasonic distance sensors, 2 infrared emitters and receivers, 1 set of inertial sensing units (two gyroscopes, one accelerometer), 9 tactile sensors, and 8 pressure sensors.
3. Devices for self-expression: a voice synthesizer, LED lights, and 2 high-quality speakers.
4. CPU (ATOM E3845) with 1.91 GHz main frequency, 4GB DDR3 memory, 32GB SSD.
5. 2.9 Ah battery, providing 1.5 hours or more of battery life for NAO, depending on usage.

2. Details of Cameras

Camera 1 & 2: DJI Pocket 2. The DJI Pocket 2, a lightweight compact camera weighing just 117 grams, features a 1/1.7" 64MP CMOS sensor, 8x zoom, and a 93° field of view. It supports video recording up to 4K/60fps and 64x slow motion. During the experiment, observers monitored the classroom in real-time using the DJI Mimo app on their mobile phones, capturing both rear and front angles. The camera's high resolution and frame rate are optimized for post-production in Final Cut Pro software.

The special education school classroom is equipped with a binocular intelligent tracking camera featuring a dual-lens system for automated tracking and recording. It includes a 1/2.8-inch CMOS sensor that produces full HD 1920*1080P video. The main tracking camera combines 20x optical and 10x digital zoom, while the positioning camera uses a 2.8mm focal length with a 2.1MP fixed-focus HD lens