Explore on Voice Parameters of Social Robots Applied in Education Industry

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Abstract - The language communication of social robots has a great significance meaning for improving the robot's intelligence and humanity.This research explores the impact of the dialogue type and voice parameter settings of social robots in the education industry on their perceived personality traits and acceptance, and constructs the principles and models of voice applications for robots that are suitable for the education industry.The study included the influence of the educational robot's dialogue type and speech parameters, gender , fundamental frequency, and speech rate. Through the control of robot's speech and dialogue content, to measure the personality of the robot during the interaction between the subjects and the robots. The experiment invited 32 subjects to conduct VHRI robot experiments, which was found that there is a significant interactive effects among the dialogue types and voice parameters of social robots used in the education industry. In addition, the gender of sound and fundamental frequency can improve the personal characteristics of robot extroversion (E), agreeableness (A),conscientiousness (C), openness (O), and anti-neurotic (N). Speech rates can improve the robot's agreeableness(A), conscientiousness (C), anti-neurotic (N), openness (O) and other characteristics. This study confirmed that the robot's dialogue types and voice parameter setting can be used to improve the robot's perceptual personality traits to improve its humanity. On this basis , the results will help social robots play their professional role in the application of education better and get better integrate into human society ,at the same time, it provides references for the voice parameters design of social robotics in different industries in the future.

Keywords: Educational robots, Human-Robot interaction（HRI）, Robot personality traits, Voice, Dialogue content