Use of a social robot in facilitating communication between children with Autism Spectrum Disorder

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Background

- Autism Spectrum Disorder (ASD) is a developmental disorder that can cause challenges in social interactions [1].
- Robot-mediated intervention has been shown to positively impact social skill development in children with ASD [2,3].

Aims of the Study

To explore whether the use of a NAO robot as a mediator increases vocal interaction between children with ASD.

Methodology

Participants (All males)
- Dyad 1: 10 &11 years old
- Dyad 2: 12 & 10 years old
- Dyad 3: 12 & 11 years old

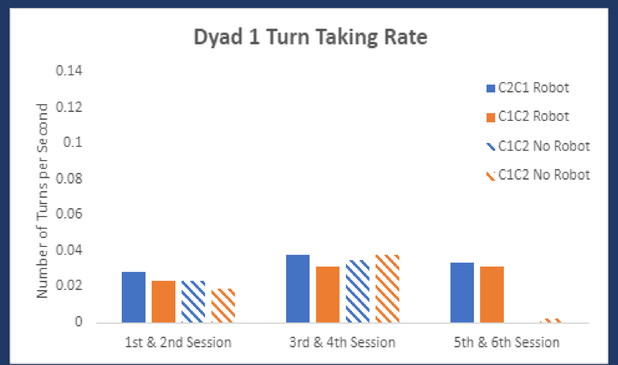


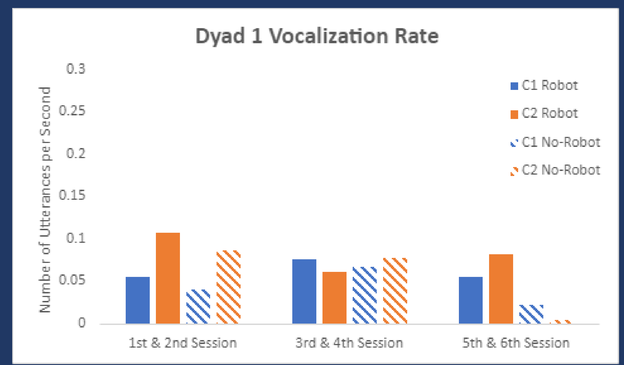
Materials
- NAO Robot

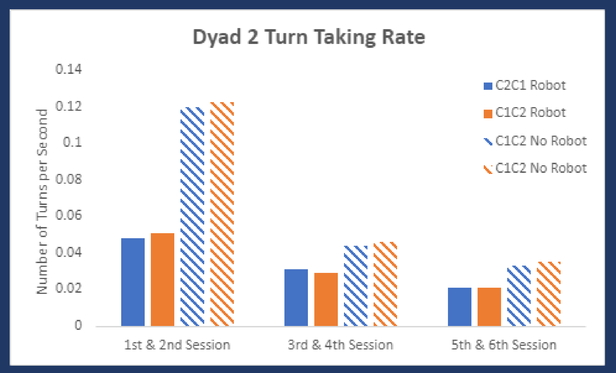
Procedure
- Six Sessions; 5-10 minutes, counterbalanced
  - Robot Session: Robot provides vocal prompt if silence persists greater than 1 minute
  - No-Robot Session: Children interact spontaneously

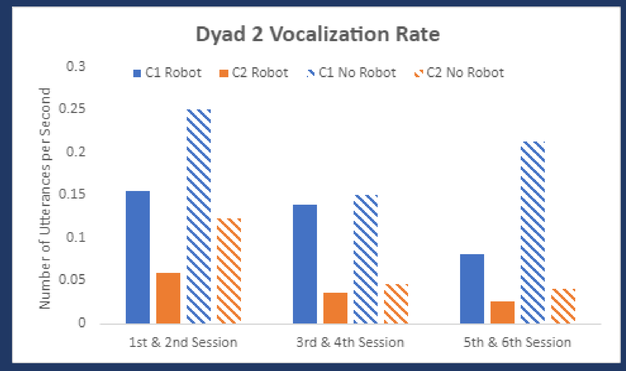
Measures [Praat 6.1.50]
- Number of utterances [N=1600]
- Number of turns [Robot, N= 292] [No-Robot, N= 335]
- Normalized as utterances or turns/second

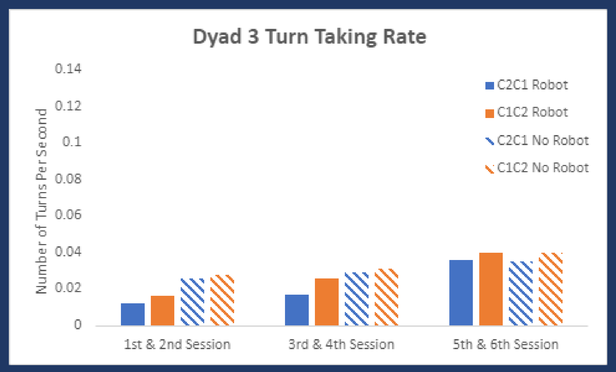
Results

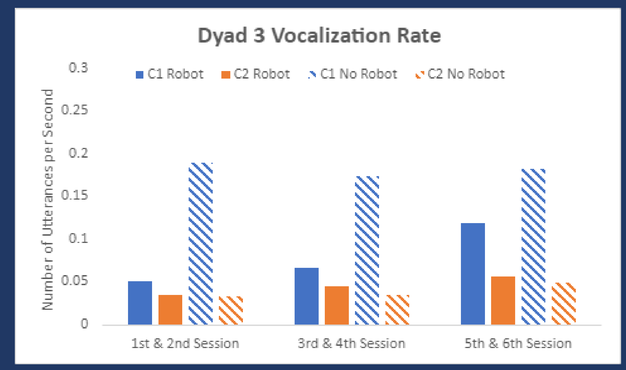












Discussion

- The results of this study demonstrate an increase in vocalization and turn-taking rate dyads 1 and 3, with no increase in either in dyad 2.
- The results suggest the use of a NAO robot as a social mediator increases vocalization and turn-taking rate among children with ASD.
- Further research should be done regarding robot mediation between children with ASD and more participants of both genders should be recruited.

Acknowledgments

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References

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