

Using a storytelling robot to support children's second language skills

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Recently, researchers have started to use a humanoid robot to support the second language skills of children with an immigrant background (e.g., Leeuwestein et al., 2021; Schulz et al., 2020). The findings are promising: children seem to learn vocabulary from a robot. However, more research should be carried out, especially containing multiple sessions. The current study, therefore, explored whether a social robot can improve multilingual children's speech production through storytelling activities over four sessions. Twenty-four immigrant children interacted with a robot telling stories. Children were divided into two conditions: children either participated in four sessions with the robot ($n = 14$), or only in the final session ($n = 10$). The overall complexity of the stories increased during the four sessions, and we hypothesized that children who would attend all lessons would gain more complex language skills. After each storytelling activity, we asked children questions about the story and measured their Mean Length Utterance (MLU) and their Type Token Ratio (TTR). Our findings show no differences between the conditions, but we found that children used fewer unique words after the fourth story than after the first story. It is possible that this finding results from a novelty effect. It is possible that children, at the start, were highly engaged with the robot and therefore used more unique words to describe the stories but after they got used to the robot only used short answers to the questions. We are currently investigating children's engagement during the sessions to support this claim.