

Dialogue between a child and the computer in the process of learning to read: Analysis in joint attention paradigm

Konrad Juszczyk (*Institute of Linguistics, Adam Mickiewicz University, Poznań*)

Children in today's western society develop in dialogue both with human beings and computers. Human beings provide them with wholehearted support which is needed in early language acquisition. Computers serve as a mind-tools for developing secondary language skills such as reading and writing. The aim of the research is to show how the dialogue between a child and the computer resembles a dialogue between people. The analysis of this dialogue is done in joint attention paradigm (Vygotsky 1989; Moore and Dunham 1995; Tomasello 1999; Eilan et. al. 2005) where acquiring language is based on social and cognitive skills such as intention-reading and pattern-finding (Tomasello 2005). Children develop a language because they identify with other people and perceive them as intentional agents. This helps them to understand communicative intentions and learn through role-reversal imitation. It is argued that children interact with the computer and avatars (life-like characters) in educational programs because they treat them like other people (media equation; Reeves and Nass 1996) and act as if they were in a joint attentional frame with them.

The program chosen for the research - *Colorado Literacy Tutor (CSLR)* – provides *Fundamental Reading Exercises* guided by a life-like character – *Marni*. The reading method deployed in this program is a combination of analytical and global method guided by the tutor (Wide [in press]). The exercises were tested by 50 Polish children in primary school and recorded in order to collect utterances and behaviours of both conversation partners: a child and the avatar. The age of children is 6-9 and the total number of exercises done is 289.

The results show that children liked *Marni* and found *Colorado Literacy Tutor* very entertaining. The average score in exercises was above 70% which suggests that Polish children understand what *Marni* says. Furthermore, children's comments and conversation-like utterances prove that they try to behave as if in a joint attention frame and interact with *Marni* identifying with her.

The conclusion is that successful computer assisted learning to read is possible because children do treat avatars as other people. Perceiving them like the self is a consequence of being brought up in a series of joint attentional frames. The more child-computer interaction resembles joint attention frame the better language support children receive.

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