Abstract

The main purpose of this thesis was to investigate whether and how the introduction of a speech-generating device (SGD) in activities at the homes of children with autism spectrum disorders (ASD) influenced communication. Four children aged between five and seven, at different stages of communicative development, participated in the study. A family-centred collaborative problem-solving model was used as a basis for the intervention and the decision-making process during selection of activities and design of the SGD applications. The children and their parents were videotaped before and during SGD intervention. The videotapes were coded along five dimensions: role in turn-taking, mode, function, effectiveness and engagement in activity. An analysis of conversational topics was done and excerpts from the videotapes were transcribed to illustrate interaction phenomena. The activity based communication analysis (ACA) method was applied to compare communication before and during intervention in the included activities. Pre- and post-interventional interviews with the Vineland Adaptive Behavior Scales (VABS) were done for all children. The first sub-study focused on *communication changes and communicative development* and compared the results for the four participants. The second study explored the *impact of different activities* on communication. Changes in *patterns of topic use and interaction* between the child and the parent were examined in the third study. The fourth study was a *case study* in which the results from the *home* setting were compared to the results of SGD use in one activity at *school* (morning circle).

The results showed an increased level of communicative effectiveness during SGD use for all children and in all activities, regardless of communicative level at the start of the project. Pre- and post-interventional interviews with the VABS showed enhanced development on the supplementary norms for children with autism. Regarding the three home activities examined (mealtime, story reading and 'sharing experiences of the preschool day'), those where the goals were mainly communicative rather than practical resulted in a more marked increase in communicative effectiveness during SGD use. The mealtime activity, in which almost all research so far into the effects of SGD use in children with autism had been done, may not always be optimal in home interventions. The fact that the parents were instructed to use the SGDs when communicating with their children brought about positive changes: the partners came closer to each other, the sub-activities and goals were better synchronized and the pictures and vocabulary on the SGDs offered a shared concrete frame of reference. The topic analysis showed that the number of irrelevant child contributions decreased, while topic length – the number of contributions within a topic segment – increased in most settings. The comparison of SGD use in different activities in home and school environments indicated that characteristics of the activities seemed to predict outcome with respect to SGD use. During the morning circle activity at school and story reading at home, the directive role of the adult resulted in more similar patterns than the other two home-based activities. This points to the following clinical implications regarding SGD intervention at home: SGDs can be used to increase interaction and communication between children with ASD at different communicative levels and their parents, but there also seems to be a need to give the parents more basic instructions regarding interaction and communication strategies.

Keywords: autism spectrum disorders, augmentative and alternative communication (AAC), speech-generating devices, communication development, communication, interaction, conversational topics, home, activities, environments

The thesis is written in English.