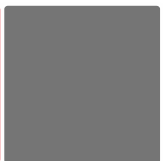


Tactile symbols and schedules: Enhancing activity and observing the use of tactile schedules

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Children with congenital blindness and alternative augmentative communication (AAC)

- Children with congenital blindness comprise a heterogeneous group of individuals
- The children are to a great degree dependent on their caregivers to organise the environment and structure their interaction to promote meaningful activity (Erin, 2000; Fraiberg, 1977; Gense and Gense, 2005; Howley and Preece, 2003; Jordan, 2005; Von Tetzchner and Martinsen, 2000).
- AAC using tactile symbols and schedules in different contexts and with different goals for the activity can help to promote the child or youths activity

Aim of the project

- To describe and evaluate the use of tactile schedules among seven children and adolescents who are blind

Two studies:

- Study 1 – Enhancing activity by means of tactile symbols: A study of a heterogeneous group of pupils with congenital blindness, intellectual disability and autism spectrum disorder
- Study 2- Observing the use of tactile schedules

Study 1

Aim:

- To describe conditions of when children with blindness have knowledge of what to do in specific situations this knowledge leads to performance or start on activities. This study investigates responses to verbal vs. tactile requests

Our hypotheses for this study were as follows:

1. The use of tactile symbols increases the likelihood that children with blindness, intellectual disability and autism spectrum disorders follow requests
2. The use of tactile symbols leads to more independent activity among the children. It stimulates them to initiate additional actions

The tactile symbols consisted of two different modes of information-giving:

- 1) Three-dimensional tactile symbols with parts of objects or arbitrary material affixed to a 7 x 7 cm thin plywood board or paper board with the symbol's name printed in text and braille below
- 2) Plywood or paper boards with the name of the activity or task written in Braille and text. The sizes of the tactile Braille symbols were 3 cm in height, but they differed in length according to the number of signs in a named activity

The symbols were individually made for each individual

The tactile schedules consisted of....

- A thin plywood board or plank with a line of Velcro affixed to the middle along its whole length where tactile symbols were placed from left to right in the order activities were planned for
- The length and height of the planks (i.e., schedules) differed

Lengths were up to approximately 1meter

Heights: - 4-5 cm for schedules with Braille symbols
 - 10 cm for schedules with tactile symbols sized 7x7

- The pupils were taught to touch the empty Velcro line when the schedule got empty spaces, part or whole, making empty spaces to function as a symbol, representing “finished”

Examples of tactile symbols



Example of a tactile daily schedule



Example of a tactile symbol in Braille



Example - tactile daily schedule in Braille



Procedure

- Video recordings from observations of how the pupils acted and performed in situations without tactile symbols present were examined
- An intervention based on using tactile symbols in various pedagogical settings was planned individually for each pupil
- The pupils were video-recorded in various selected pedagogical naturalistic settings

Procedure

- Tactile symbols were introduced in naturalistic settings, either as single symbols representing a narrowly defined activity or as an activity divided into separate tasks
- When the pupil touched the tactile symbol the activity would start immediately
- All pupils had received training in touching/reading the symbols on schedules from left to right
 - to give access and possibilities to gain information about order and succession of events
- They had been taught to administer their use of schedules
- The pupils were not taught to read the schedules in other ways

Results study 1

- At T1 the pupils followed seldom or never verbal requests from their caregivers at the time of observation
- At T2 all pupils perceived tactile symbols to be explicit requests to perform the act referred to by the symbols
- The pupils also showed interest by touching the tactile symbols when they were available, N 246 (99.6%)
- The children with with some, or relatively good verbal skills added independent actions in addition to follow the particular tactile request
- Independent actions were shown through the use of advanced reading strategies or changing a tactile choice

Aims Study 2

- To give detailed descriptions of the behaviour of seven pupils with congenital blindness and varying degrees of additional disabilities when using tactile schedules
- To show behaviours that may be indicative of attainment of some of the goals that are usual to have for the use of tactile schedules
- Basic conditions
 - Attentiveness to tactile schedules and generalization of use
- Particular functions/goals -To provide structure – increase predictability to each day and to activities
 - Sense of agency – display interest and preference
 - Communication – communicative support
- Observing how the use of tactile schedules might influence the interaction between pupils and teachers

Results

- The children showed interest in the schedules
- All the children used tactile schedules actively
- The children used several strategies when reading the tactile schedules, both reading strategies they had been taught and their own strategies
- Reading strategies
 - *Read Left to Right (RLR)* – the pupil touched/read the whole, or part of the schedule, from left to right
 - *Read Symbols Simultaneously (RSS)* the pupil used one or two hands, or spread fingers on one or two hands, to read or be in touch with more than one symbol at the same time
 - *Read Right to Left (RRL)* the pupil touched/read the whole, or part of the schedule, from right to left

Results

- It was possible to find examples of child behavior indicating achievement of
 - a generalized use of tactile schedules
 - predictability
 - agency
 - communication

Behaviour indicating basic functions in progress

Use of taught and untaught reading strategies

P7 is standing alone in front of his daily schedule, which is placed on the wall. He independently and quickly touches his tactile schedule while using both hands on one or two symbols simultaneously. He touches 8 different symbols this way touching some several times using strategy *Read Left to Right*, *Read Right to Left* and *Read Symbols Simultaneously*.

His teacher stands behind him, following the pupil's exploration of the symbols on the schedule for ten seconds, and then says 'yes' followed by physically leading P7's left underarm lightly in the direction of the first symbol on the schedule.

Example - Indication of agent function, predictability and communication

T: 'What shall we do last? It is . . . '

P3: 'Braille'

T: 'Yes. Yes, then all is ready'

P3: (mumbles and removes the two last symbols from the schedule and change their places in the row. Data becomes the last symbol and Braille the second last)

T: 'Do you want to have Data last?'

P3: 'Yes. Yes!'

Conclusions

- Tactile schedules seemed to be a useful tool for children with blindness with or without ASD and ID which the pupils could get knowledge of the day or of different situations
- When child behaviour indicating interest and generalised use of tactile schedules is shown, this may mean that the child is open to learning at that time and may thus increase the probability that the child's use of symbols and schedules has achieved a tool-function for the child

Conclusions cont.

- The availability and use of tactile schedules may contribute by increasing the opportunities for learning situations to arise for both pupils and teachers
- Thus, the use of tactile schedules in both interactional and educational situations may influence different aspects of educational goals for individuals who are blind

Conclusions cont.

- Since tactile schedules seemed to be a tool with which the pupils could get knowledge of the day or of different situations, it also includes more possibilities for the teachers to expand the learning opportunities for the pupils
- This is valuable in light of the pupils' difficulties in enabling predictability of situations either because of their difficulties within the autism spectrum and/or lack of sight and thus their dependence on other persons to achieve this

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