

Teaching social skills to young children with autism

dr Anna Budzińska



Instytut Wspomagania Rozwoju Dziecka
Institute for Child Development

Autistic Disorder

The autistic disorder is one of the pervasive developmental disorders characterized by deficits in:

- social behaviors
- ability to communicate
- the presence of stereotypic behaviors and abnormal interests and activities.

Criteria according to DSM-IV-TR

Qualitative disorders in social development expressed through at least two of the following four points

1. Significant disorders of nonverbal behaviors

- eye contact
- facial expression
- posture
- gestures - important in social contact

2. Inability to establish social contacts typical for the given level

3. Lack of spontaneous sharing of interests

- no pointing
- no sharing interest in objects

4. Lack of awareness of other people's physical presence or feelings



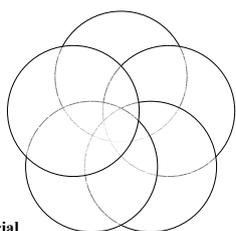
1. Nonverbal Social Behaviors

2. Imitation

3. Independent Play

5. Social Function of Language

4. Social Play



NONVERBAL SOCIAL BEHAVIORS

TYPICALLY DEVELOPING CHILDREN

CHILDREN WITH AUTISM

Year 1 of life

- Responding to eye contact, gestures and facial expressions during social interaction
- Initiating social interaction
- Sharing attention and interests with others

- Combining gestures and eye contact

- Not responding to nonverbal communication – significantly impaired reactions to gestures and facial expressions
- Difficulty initiating social interaction
- 80-90% of children have difficulty sharing attention – they do not use gestures to share interest in objects; they do not look at items pointed to by other people
- Impaired eye contact

IMITATION

■ TYPICALLY DEVELOPING CHILDREN

CHILDREN WITH AUTISM

Year 1 of life

- Imitation of gestures, e.g. waving good-bye
- Imitation of movements with objects

Year 2 of life

- Imitation of sequences of actions or actions previously observed in others

- Impaired ability to imitate movements

- Significant difficulty imitating movements with objects

- Highly limited ability to imitate sequences of activities

INDEPENDENT PLAY

TYPICALLY DEVELOPING CHILDREN

CHILDREN WITH AUTISM

Year 1 of life

- Independent play with no rules; exploring own body, running, jumping
- Playing with objects: manipulation of objects
- Using familiar objects as intended

Year 2 of life

- Symbolic play
- Ability to pretend

- Numerous stereotypic behaviors during play

- Stereotypic manipulation of objects

- Lack of symbolic play

- Lack of pretend play

- Ritualistic behaviors

SOCIAL PLAY	
TYPICALLY DEVELOPING CHILDREN	CHILDREN WITH AUTISM
<p>Year 1 of life</p> <ul style="list-style-type: none"> ■ Exploration of environment and observation of others ■ Use of patterns developed during independent play <p>Year 2 of life</p> <ul style="list-style-type: none"> ■ Parallel play with no participation of others <p>Year 3 of life</p> <ul style="list-style-type: none"> ■ Parallel play with limited participation of others <p>Year 4 of life</p> <ul style="list-style-type: none"> ■ Group play with peers ■ Prosocial behaviors – expression of interest in others, sharing toys and materials ■ Inviting others to play – communication of own needs, establishing eye contact 	<ul style="list-style-type: none"> ■ Stereotypic manipulation of objects ■ Avoiding contact with others and not responding to their invitation to play ■ Resisting to another individual's invitation to play or disturbing their routine during play ■ Lack of initiating invitations to play

SOCIAL FUNCTION OF LANGUAGE	
TYPICALLY DEVELOPING CHILDREN	CHILDREN WITH AUTISM
<ul style="list-style-type: none"> ■ Responding to questions from others ■ Initiation of interaction with others ■ In time, communication of own needs by combining verbal and nonverbal behaviors 	<ul style="list-style-type: none"> ■ Verbal communication is limited to context – mainly when the child wants to get something ■ Occasional verbal communication of own needs, but events occurring in the environment are very rarely commented upon ■ Conversation is rarely initiated or maintained ■ Immediate and delayed echolalia

TECHNIQUES OF TEACHING SOCIAL BEHAVIORS

- ### **Techniques used in teaching social behaviors**
- Discrete trial training
 - Activity Schedules
 - Incidental Teaching
 - Scripts and script-fading
 - Videomodeling

- ### **1. Discrete trial training**
- Stimulus presentation
 - Child's reaction
 - Consequence
 - Short break between the consequence and the next stimulus
- (Maurice, 1996)

2. Activity schedules

An activity schedule is a set of pictures, symbols or words that cues someone to engage in a sequence of activities.

(McClannahan, Krantz 1999)

2. Activity schedules - continuedc.d.

- Interactions with peers
- Interactions with adults
- Play
- Initiation of conversation

2. Activity schedules - continued

As skill mastery increases, environmental stimuli, such as appearance of a person or a favorite activity, become cues for correct social behaviors.

3. Incidental teaching

It is used in order to develop interaction by waiting for the child to initiate nonverbal or verbal interaction on a certain subject and reacting in a way that will allow for further interactions on the part of the child.

(Hart, Risley, 1982)

3. Incidental teaching - continued

- Using the child's natural motivation to obtain an object or perform an activity
- Planned incidental teaching

3. Incidental teaching - continued

Children with autism present skills learned during incidental teaching much more frequently than those learned through discrete trials training

(Fenske, Krantz, McClannahan, 2001)

4. Scripts

- A recorded or written word, expression or sentence that makes it easier for the child to begin or continue a statement.
- Scripts are added to stimuli that are to eventually control the student's statement.
- Scripts should be appropriate for the level of the student's functioning.

5. Videomodeling

- The child watches the video – initially several times
- The child performs the task – materials are located next to the television set
- Reward – if the response is correct
- The child watches the video again if responses were inappropriate or lacking

5. Videomodeling - continued

- Allows observation of target behavior in a natural situation in which a given reaction occurs, e.g. school, playground
- Allows development of generalization
(Budzińska A., 2005)

PROGRAMS DEVELOPING SOCIAL BEHAVIORS

When to begin teaching social behaviors?

Programs designed to develop social behaviors ought to be introduced at the very beginning of therapy, regardless of the child's age or level of functioning.

Introduction of programs developing social behaviors

- Motivational system
- Tolerance of manual prompts

1. NONVERBAL SOCIAL BEHAVIORS

Programs developing nonverbal social behaviors – examples

- Eye contact – incidental teaching
- Learning to respond to a smile with a smile, waving good-bye, shaking hands to greet – incidental teaching, discrete trial training
- Appropriate behaviors toward familiar and unfamiliar persons – discrete trial training
- Joint attention – fetching interesting objects or following an object being presented with the eyes – the script and script fading, videomodeling
- Following roles in public places and social situations.

STUDY I

Teaching social behaviors to a nonspeaking child with autism

Anna Budzińska and Joyce MacDuff
Princeton Child Development Institute
Princeton, NJ, USA



Joint Attention

An ability, normally appearing at the age of approximately 12 months, to point to or fetch an object that the child wants to show to another person. Eye contact is a necessary component of this behavior.

Abstract

The study shows the use of script and script fading procedure in teaching social behaviors to a three-year old boy with autism.

Abstract– continued

Scripts (names of objects) were recorded on LM cards. Pictures of the objects pertaining to the interactions were attached to the cards.

A sample script



Language Master for listening to scripts



Participant

A three-year old boy with autism participated in the study. He received four hours of therapy daily at the Princeton Child Development Institute (PCDI). At the time of the study, the boy had been a student at PCDI for 13 months.

Settings

All sessions were held in a 3x6 m therapy room at PCDI. The teacher and the child were seated at a small table. The recorded cards, a Language Master player and toys were placed on the table.

Dependent Variables

Social behaviors were defined as finger pointing to an object (e.g. a picture, a stamp, a puzzle, a sticker) and looking at the teacher.

Experimental Design and Measurement Procedures

- A multiple-probe design across materials (puzzles, stamps, and sticker books) was used to assess the effects of scripts, script-fading, and prompting procedures.
- The behavior measurement consisted of counting the frequency of social behaviors during a two-minute time period. The IOA test was conducted during 33% of sessions.

Experimental Conditions

All sessions lasted two minutes

The baseline: During data collection for baseline measurements, no manual prompts were used. If the boy initiated social interactions, the teacher named the object pointed to by the child (e.g. "an apple"). During each session, edible rewards were placed in a cup for proper manipulation of materials and appropriate posture at the table. A maximum of seven rewards were provided during each two-minute session.

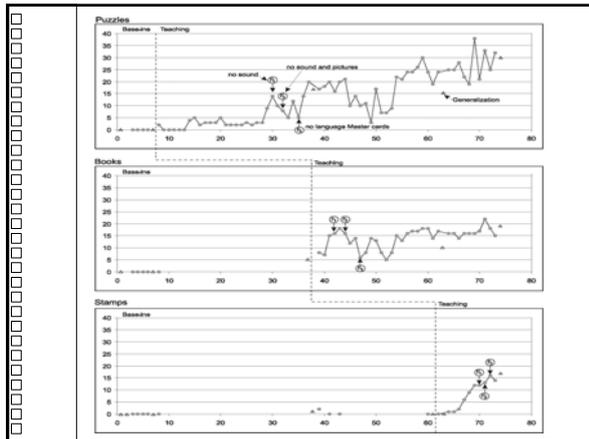
Experimental Conditions - continued

TEACHING

- While teaching social behaviors, the teacher used scripts and graduated manual prompts.
- Edible rewards were placed in the cup at the moment when the child on his own engaged in appropriate social behaviors. The cup with rewards was handed to the child after one minute and at the end of the two-minute session.
- When the number of social behaviors increased, the process of script fading began. First, the recording was faded, then the picture of the object attached to the card, and finally – the card.

Generalization

- The materials used during generalization (puzzles, stamps, stickers) were never presented during the teaching period.
- There were no LM cards or pictures during testing of generalizations. The rewards were provided for correct manipulation of the materials and proper posture, for a maximum of seven times during a single session. If the child initiated social behaviors, the teacher named the object pointed to with a finger.



Results

- During baseline measurements the student did not point to objects with his finger and did not look at the teacher.
- During the teaching period, the boy initiated social behaviors on average 8 times with stamps, 13 times with puzzles, and 14 times with stickers during two-minute sessions.
- Following script fading, the number of acquired social behaviors remained at a steady level with regard to all three activities. This tendency was also visible during generalization.

Discussion

- With only 74 sessions, the boy acquired the skill which is one of the basic components of social behaviors in correctly developing three-year old children.
- This ability was generalized in various situations and locations.
- The script method used to teach social behaviors required very small time investment as the sessions were only two minutes long.

2. IMITATION

Programs developing the ability to imitate – examples

- Imitating a peer – videomodeling
- Imitating with objects in a small group – activity schedules
- Imitating children in a peer group – discrete trial training

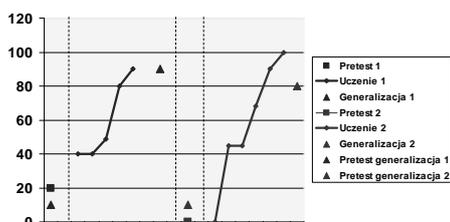
Imitating movements – videomodeling N.VT.1

Definition of target behavior: Correctly and without prompts, the student imitates movements of a model presented as a video recording. The student's response must appear within five seconds of the presentation.

Imitating movements – videomodeling N.VT.1

Teaching method: Within five seconds of hearing the instruction “Do this” or seeing the video, the student repeats the activity performed by the instructor in the film. The response is considered correct if the student does it on his own and without a prompt. During the teaching, manual prompts are used, which are faded as soon as it is possible.

Imitating movements – videomodeling N.VT.1



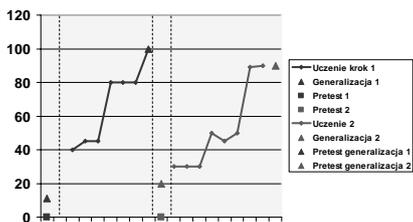
Teacher – Student Play IR.U.1

Definition of target behavior: During play, one of the students imitates other student who acts as a teacher. The teacher demonstrates movement to be performed by the student. The student imitates the teacher's movements within five seconds of their presentation.

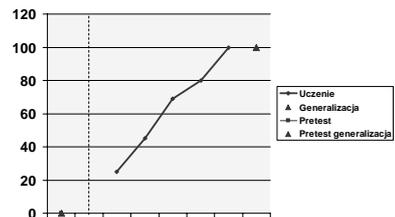
Teacher – Student Play IR.U.1

Teaching method: Students are standing or sitting across from each other. One student acts as a teacher. The student demonstrates a movement. An activity schedule with pictures or verbal cues may be the "teacher's" prompts. One of the therapists provides prompts to the "teacher" and the other one to the "student". Correct responses are rewarded according to the student's individualized motivational system.

Teacher – Student Play IR.U.1 Imitation without objects



Teacher – Student Play IR.U.1 Imitation with objects



3. INDEPENDENT PLAY

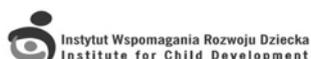
Programs developing ability to independent play – examples

- Independent play – an activity schedule
- Constructing a model from building blocks – an activity schedule
- Reading a book – discrete trial training
- Learning to play with a complex toy – videomodeling
- Arranging puzzles – discrete trial training

STUDY II

Teaching Social Behaviors to Children with Autism – independent play

Anna Budzińska and Marta Wójcik
Instytut Wspomagania Rozwoju Dziecka w Gdańsku



Abstract

The study shows using the videomodeling method in teaching social behaviors – independent play in three boys with autism.

Abstract – continued

Video material presented a way of using toys that were located nearby. No manual or verbal prompts were used.

Participants

Three boys with autism participated in the study. Two were three years old and one was four years old. They participated in two hours of therapy daily at the Institute for Child Development (IWRD). At the time of the study, one of the boys had been a student at IWRD for five months and the other two – for two months.

Settings

All sessions were held in a 3x2.5 m therapy room at IWRD. There were two 60x60 cm tables in the therapy room. The computer on which the video was played was on one of the tables. The toys were on the other table right next to it. The child watched the video standing up and then walked over to the table with the toys. The therapist stood behind the child.

Dependent Variables

Social behaviors were defined as correct manipulation of toys in accordance with their function and the verbal component.

Experimental Design and Measurement Procedures

- Multiple baseline across children was used to assess the effectiveness of the videomodeling method.
- The behavior measurement consisted of counting the correct reactions (movement plus sound). The data was graphed as a percentage of correctly performed components of the chain of movements being taught. The IOA test was conducted during all sessions.

Experimental Conditions

Baseline – video material was not presented during baseline data collection. The teacher gave the instruction “Play” and did not provide any prompts. The child was rewarded with food for standing still over a two-minute period. Manual prompts were only used in order to interrupt stereotypic behaviors.

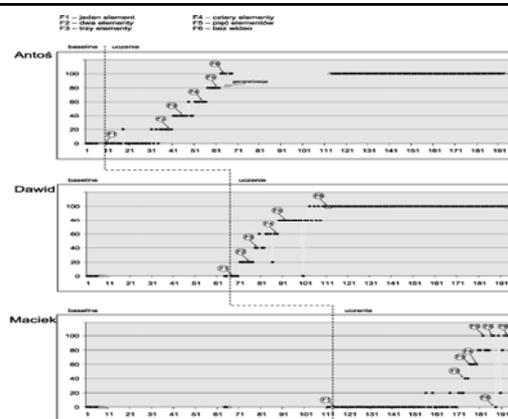
Experimental Conditions - continued

TEACHING

- While teaching social behaviors, the teacher used videomodeling, backward chaining and rehearsal of a behavior chain. No manual or verbal prompts were used. Only stereotypic behaviors were interrupted.
- Food rewards were placed in a cup the moment the child performed on his own a correct reaction within a chain of behaviors. The cup with rewards was handed to the child at the end of the session.

Generalization

- Materials used during generalization (a new set of toys) were never presented while teaching.
- Video recording was not presented during generalization testing. The teacher only gave the instruction “Play”. Rewards were provided for standing still, a maximum of five times during a single session.



Results

- During baseline measurements, the participating students were unable to correctly play with toys
- In order to master the ability to independent play, Boy 1 needed 54 sessions, Boy 2 – 67 sessions, and Boy 3 – 82 sessions.
- Teaching was completed when the student, when instructed “Play”, without prior video presentation, correctly manipulated the toys (movement plus verbal component).
- During generalization, all students, without prior video presentation, correctly performed a sequence of activities (movement plus verbal component).

Discussion

- Once learned, the behavior sequence was maintained. Despite a month long vacation the children were able to correctly play with toys.
- The learned activity became a reinforcement and is currently a stimulus used to initiate interaction with people from the environment.
- This ability was generalized in various situations and locations.
- In all children, learning the first reaction within the chain took the longest, while the subsequent steps were mastered significantly faster, e.g. F1 – 30 sessions, F2 – 6 sessions, and F5 – 3 sessions. This may suggest that with videomodeling technique, manual or verbal prompts should not be used.

4. SOCIAL PLAY

Examples of programs developing the social play skill

- Play with board games – discrete trial training
- Physical exercise (gymnastics) – videomodeling
- Group play with objects – activity schedules, scripts
- Theme games – videomodeling, activity schedules, scripts

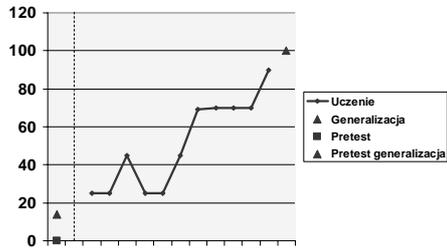
Play with peer IR.WZ.1

Definition of target behavior: Group play means that the student initiates the desire to play with a peer, and uses materials designed to carry out the activity.

Play with peer IR.WZ.1

Teaching method: A symbol indicating play with a peer is placed in the student’s schedule. Having read the symbol, the student selects the peer and the type of activity in which they will participate. Subsequently, he walks up to the peer, looks at him/her and utters a word or a sentence inviting to play. Then, for a period of time the students perform the activity. Upon conclusion of play, the student thanks the peer. If necessary, the instructor provides manual prompts assisting the student in carrying out all the steps in the task. Correct responses are rewarded in accordance with the student’s individualized motivational system.

Play with peer IR.WZ.1



5. SOCIAL FUNCTION OF LANGUAGE

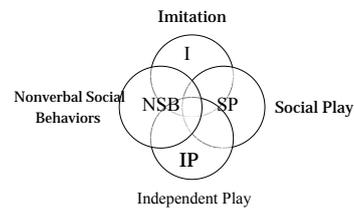
Social Behaviors

Full picture of social behaviors together with verbal component



Social behaviors

- We should shape social behaviors even if we can not add the verbal component



Programs developing social functions of language – examples

- Programs developing the ability to carry on conversation – recorded scripts
- Programs developing the ability to initiate conversation – activity schedules, scripts
- Requests – incidental teaching
- Interactions with peers – activity schedules, scripts
- Interactions with adults – activity schedules, scripts

Requests – JE.P.1

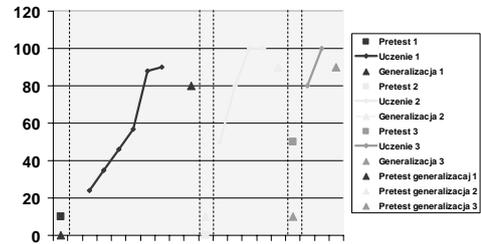
Definition of target behavior: A request means that the student initiates the desire to possess an object or to conduct an activity by pointing with finger, looking at the teacher and/or naming it. The student's response is considered correct if it appears without a prompt within five seconds of the instructor's question (e.g. "Say what you want", "Choose what you want") or the object's presentation.

Requests – JE.P.1

Teaching method: Objects attractive to the student are laid out on the table and the therapist/instructor waits until he initiates the request or the therapist shows him a board with pictures of rewards and/or asks “What do you want?” The student points to the object or removes the picture.

He establishes eye contact with the therapist and/or says the word/sentence pertaining to the given award. If necessary, the instructor provides manual and verbal prompts. Verbal prompts may be recorded on scripts (Language Master cards or mini-me).

Requests – JE.P.1



Interactions PA.I.1

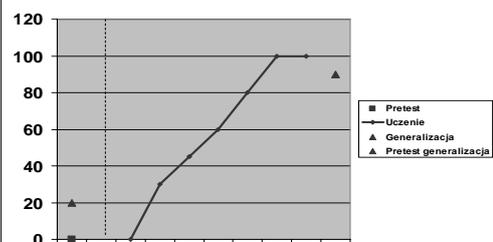
Definition of target behavior: The student selects the picture/object to which a Language Master card/mini-me or script can be attached. Interaction means looking at a person, handing to that person the picture illustrating the activity (e.g. a picture of food) or the object (e.g. a book), and naming the object/activity (repeating the word, phrase or sentence recorded on the Language Master card or reading the script).

Interactions PA.I.1

Teaching method: The instructor provides manual prompts for the student to make a selection from the activity schedule, to read/listen to the script, and hand over the picture/object. The instructor waits for eye contact and then reacts to the interaction. No verbal prompts are used with the scripts. Once the student has mastered speaking the scripts, they are faded in reverse order, one word at a time, until the script has been eliminated altogether.

The interaction's recipients never ask questions nor do they give instructions. With friendly expressions on their faces, they look at the student with anticipation and comment on each of the student's statements with short enthusiastic remarks.

Interactions PA.I.1



Scripts - examples



Scripts - examples



Conclusions

- From the very beginning of therapy it is necessary to develop a greatest possible number of social behaviors.
- It is necessary to search for new methods of teaching social behaviors.

CONCLUSIONS

Social behaviors provide the child with an opportunity to develop correct relationships with the persons from the child's environment, family members and peers. The efforts of therapists and scientists ought to be focused on searching for the most effective methods of shaping social behaviors.

LITERATURA

1. Birch, A., Malim, T. (1995). „Psychologia rozwojowa w zarysie. Od niemowlęstwa do dorosłości”
2. Harwas-Napierała, B., Trampała, J. (2000). „Psychologia rozwoju człowieka”
3. McKinnon, K., Krempa, K. (2003). Social skills solutions a hands-on manual for teaching social skills to children with autism”
4. Quill K., A. (2004). „Do, watch, listen, say. Social and communication intervention for children with autism”
5. Schaffer, H., R. (1981). Początki społecznienia dziecka.
6. Schaffer, H., R. (2005). Psychologia dziecka.
7. Schlinger, H., D. (1995). A behavior analytic view of child development.
8. Tyszkowa M. (1988). Rozwój psychiczny człowieka w ciągu życia. Warszawa, PWN.
9. Żebrowska, M. (1976). „Psychologia rozwojowa dzieci i młodzieży”.

Institut Wspomagania Rozwoju Dziecka w Gdansk
(Institute for Child Development in Gdansk)
in cooperation with
the Institute of Psychology, University of Gdansk
is pleased to announce

the 2nd Symposium
Early Behavioral Intervention in Children with Autism.
Research Approach

Gdansk, Poland
December 2, 2007

Presenters will include researchers from
Princeton Child Development Institute
and
Instytut Wspomagania Rozwoju Dziecka w Gdansk
(Institute for Child Development in Gdansk)

details: www.iwrtd.pl