

Assessment of play behaviours and social interactions of two blind girls: Case studies in Japan

Darja Kobal Grum

University of Ljubljana, darja.kobal@ff.uni-lj.si

Toshibumi Kakizawa

University of Tsukuba, kakizawa@human.tsukuba.ac.jp

Marie Celeste

Loyola University in Maryland, mceleste@loyola.edu

Abstract

The play behaviours and social interactions of two blind preschool girls with no additional disabilities are described. The data obtained from the assessment protocol indicated that they demonstrated limited play behaviours and compromised social interactions. The results reinforce the variability of social competence skills in young children with visual impairments.

KEYWORDS: childhood, blindness, play behaviour, social interactions

Introduction

The construct of play evolves continuously throughout early childhood. Initially, infants and toddlers demonstrate solitary play that evolves into parallel and then social play. Solitary and parallel plays are both non-social, meaning that a child plays alone although in the presence of his or her peers. As play evolves from non-social to social, it is critical for children to be able to initiate and maintain interactions with their peers (Brownell 1986; Guralnick 1999a; Rubin & Coplan 1992). Social play requires children to demonstrate strategies to gain entry into peer groups (Kuramochi 1994; Kuramochi & Shibasaka 1995), resolve conflicts and maintain interactions with other children (Brownell 1986; Rubin & Coplan 1992).

There are 65 special schools for students with visual impairments (special school) in Japan and 171 children attend the kindergarten program of these schools (Nihon 1995; Takahashi 2010). Half of them also attended to regular kindergarten or preschool (Inohira 1992; Takahashi 2010). There are a fewer children in a classroom of special school. For

visually impaired children, it is better to attend to a regular kindergarten or preschool, because they can have real experience playing with sighted children in a group, which are difficult to have in a special school (Shirai and Kobayashi 2005).

However, it is extremely difficult for visually impaired children to have good interactions with sighted peers, because there are limitations in their behaviour, which are caused by difficulties in receiving information through their vision. Studies have indicated that children who are visually impaired demonstrate play behaviours that are predominantly exploratory in nature. These children less frequently engage in manipulative play or the functional use of toys, and demonstrate more stereotypical behaviour during play (Adelson & Fraiberg 1974; Parsons 1986; Rettig 1994; Sacks et al. 1992; Skellenger & Hill 1994; Troster & Brambring 1994; Warren 1984).

Sakamoto (1991) investigated blind pre-schoolers who attended kindergarten with sighted children and reported that children with visual impairment engaged in solitary play most of the time during free play and that there were few social interactions both from them to sighted children and from sighted children to them. In addition, it was easier to adapt to a structured setting than to a free play setting (Sakamoto 1991).

A founding principle of inclusion is to give children with special needs equal opportunities to participate fully in regular education classrooms with children who are not disabled. However, studies have shown that for some students with special needs, placement in regular education classroom without appropriate social support resulted in social isolation and, ultimately, a more restrictive environment (Gresham 1981; Sacks et al. 1992). Therefore, classroom teachers need to make the development of social competence a priority for children with special needs. It is critical that children who are visually impaired be taught the necessary social skills to interact effectively with their peers. It is also important that the children's ability to implement these skills be successfully monitored (Kekelis & Sacks 1988; Sacks et al. 1992).

Objective

Special schools for visually impaired children (special school) in Japan remain common and the most appropriate place for providing education and instruction for blind children. Since the principal of inclusion is widely recognised in Japan, many children with visual impairments are attending both regular preschool and special school. Therefore, this study identified the characteristics of the play behaviours of blind children in different settings, such as a special school and regular preschool.

Methodology

The evaluation methods included developmental and adaptive assessments, structured play observations (during "free play" in the kindergarten, special school and home), and interviews (with parents and teachers). Data gathered from multiple sources and through varied methods provide a comprehensive picture of children's social competence, including the type of play (solitary, parallel, group, and so forth) and the quality and efficacy of social interactions (McConnell & Odom 1999; McFall 1982; Poggrund & Fazzi 2002; Tremblay et al. 1981).

The participants

There were two participants (Participant A, Participant B). Participant A was a blind Japanese girl, aged 4 years and 4 months. She had surgery for craniopharyngioma when she was 3 years and 1 month old. She had no neurological or physical handicaps. She had no vision in both eyes due to the optic disc atrophy caused by craniopharyngioma. She was admitted to early intervention services of a special school for visually impaired at the age of 3 years and 2 months. The early intervention services contained group activities with children who were 2–3 years old and had visual impairments and some lectures for parents whose children were visually impaired. The girl attended group activities, and her parents and grandparents participated in some lectures. She began to attend to a kindergarten program of the special school for visually impaired at the age of 3 years and 11 months.

Participant B was a Japanese girl aged 4 years and 2 months, who was blind as a result of retinopathy of prematurity and had no neurological or physical handicaps. She had no vision in either of her eyes. She was admitted to early intervention services of a medical institution for the children with disabilities when she was 1 year and 9 months old. She received occupational therapy every two months. In addition, she was admitted to the same early intervention program as Participant A when she was 2 years and 9 months old. She attended to group activities, and her parents participated in some lectures. At the age of 3 years and 9 months, she began to attend to a kindergarten program of the special school. She also began to attend to a preschool with sighted children.

Settings

Special school for visually impaired

Participant A and Participant B attended the kindergarten program of a special school for the visually impaired (from 9:30 a.m. to 13:30 p.m.) two days per week. The class consisted of 4 four-year-old children, 3 five-year-old children and 3 six-year-old children (5 boys and 5 girls), and the student-to-teacher ratio was 10:4. The three teachers had advanced degrees in early childhood education and early childhood special education. The children in the class were diverse with regard to their developmental levels and individual needs.

The special school classroom was divided into four main areas. In the first area, there were some shelves filled with various toys, and the children played with them sitting on the floor. In the second area, children could play instruments (electronic piano, drums, bells, tambourine, etc.). In the third area, there was typical equipment for a small playground (slide, swing, trampoline, wooden horses). In the fourth area, there were some tables and chairs and children enjoyed drawing pictures, beads and craft works there. They each brought the items they needed to the table. For group play, teachers put playground requisites away to make more room, and children brought their own chairs if they needed them and sat on them each time.

Home

Participant A resides with both parents and a younger (two-year-old) brother in an apartment block; the family lives near the grandparents. Play observations at home took place in the children's room, family room and in the bedroom. In the children's room, there are several toys and playground items, e.g. slide, swing, horizontal bar and a jungle gym. The bedroom contains two beds and Participant A usually enjoys jumping on the bed like a trampoline.

Preschool

Participant B attended a municipal preschool from 9:30 a.m. to 4:00 p.m. three days per week. The class consisted of 26 four-year-old children, and the student-to-teacher ratio was 26:3. The two teachers were both experienced in early childhood education but did not have any experience of early childhood special education. One assistant teacher was arranged for the girl in this class. Before Participant B was admitted to this preschool, a special-school teacher gave some advice, e.g. putting a button on the girl's shelf so she could identify her place by herself and putting a tactile mat just before the difference in the floor level as a reminder.

Instruments

Developmental assessment

The Battelle Developmental Inventory 2nd edition (BDI-2; Newborg et al. 2005) is a standardised, norm-referenced, individually administered assessment battery of essential developmental skills in the personal or social, adaptive, motor, communication, and cognitive domains. BDI-2 is a revision of the BDI (Newborg et al. 1988). Although the normative sample did not include children with visual impairments, it was selected for this research because it allows for adaptive administration and scoring procedures for children with impairments.

The Oregon Project for Visually Impaired and Blind Preschool Children (OR; Brown et al. 1991) was also administered. It is a criterion-referenced instrument that was specifically developed for young children with visual impairments. It is not intended to provide a precise developmental age score; rather, it provides estimates of age-functioning levels in each of eight domains: cognitive, language, socialisation, self-help, fine motor, gross motor, vision, and compensatory skills. The skills in each domain are developmentally sequenced and arranged in age categories. All significant skills, including the prerequisite skills for orientation and mobility and Braille, are included.

Adaptive behaviour assessment

The participant's special school classroom teachers served as collective respondents for assessing the participant's adaptive behaviour on the Vineland Adaptive Behavior Scales (VABS) classroom edition (Sparrow et al. 1983). The VABS includes 244 items that assess adaptive behaviour in the classroom. It was designed to assess personal and social functioning and is organised around four behavioural domains: communication (receptive, expressive, and written), daily living skills (personal, domestic, and community),

socialisation (interpersonal relationships, play and leisure time, and coping skills), and motor skills (gross and fine). The VABS provides for percentile ranks and stanines (for the domain and composite scores), adaptive levels (by percentile groups), and age equivalents (by raw score conversions). The 'adaptive behaviour composite' summarises the child's performance in all four domains. It should be noted that the normative sample for the VABS did not include children with visual impairments.

Structured play observations

Participant A was observed during free play in the special school (70 minutes) and home settings (30 minutes), and Participant B was observed in the special school (60 minutes) and preschool settings (40 minutes) for a total of 100 minutes (10 minutes per session) over a two-week period. Observations were recorded in 10 one-minute intervals. The observations were analysed using the Play Observation Scale (POS; Rubin 2001) and the Individual Social Behavior Scale (ISBS; Guralnick and Groom 1987). The POS is a measure of social participation and cognitive play. It has proved useful in determining age and gender differences in children's play, socioeconomic status differences in play, effects of the ecological setting of play, individual differences in play, and the social contexts within which the various forms of cognitive play are distributed.

The instrument provides a framework for coding play and non-play behaviour. The cognitive play categories (functional, constructive, dramatic, and games with rules) are nested within the social play categories (solitary, parallel, and group) (Rubin 2001). It is recommended that behaviour be observed in brief intervals (10 seconds to 1 minute), followed by time for coding (to be kept as close to 5 seconds as possible). An Observation Coding Sheet is provided, on which the observer records the child's predominant activity during the allotted time. The instrument provides means to record the most predominant behaviour that is observed during the interval. It is suggested that in order to obtain a valid measure of the child's general play styles, no more than five minutes of behaviour should be recorded on any given day but that a minimum of 15 minutes of POS data should be gathered.

The ISBS is a measure of peer-related social behaviours that was developed by Guralnick and Groom (1987) as an adaptation of the earlier work by White and Watts (1973). It provides a framework for identifying and coding peer interactions. Observers record the occurrence of individual social behaviours, such as joining peers in a specific activity, expressing hostility toward peers, leading in peer activities, following a peer's lead, refusing to follow the lead of a peer, using a peer and the participant as a resource, taking an unoffered object, defending property, attention-seeking behaviour of peer and participant, and the efforts of a peer and the participant to find agreement. It is recommended that a maximum of 10 minutes of behaviour be observed in one day in short intervals (10 seconds to 1 minute). The ISBS provides a series of codes with associated behaviours. The observer is directed to indicate (using the codes) all the behaviours that are observed during the set interval on a recording sheet. The instrument provides for the recording of the range and frequency of social interaction behaviours with peers.

Celeste (2006) developed a single, “blended” coding sheet, divided to provide for recording in 10 one-minute intervals. In the prior US study, she (using a stopwatch) timed the intervals, observing and then recording the predominant play or non-play behaviour (as indicated by the POS) and all the peer interaction behaviours (as indicated by the ISBS) that she observed. The recording time between intervals ranged from 5 to 15 seconds. In the replicated study in Japan, free play situations that were part of the research were videotaped and then analysed.

A modified version of the observation schedule (60 minutes of free play over a two-week period in one-minute intervals) and observational instrumentation (POS and ISBS), used by Guralnick, Hammond and Connor (2003) and Guralnick et al. (1996) were used. Those studies described the play behaviour and social interactions of young children with developmental delays. It should be noted that in those studies, observations were conducted in the preschool settings only. This study expanded the settings in which observation took place to include the special school for the visually impaired and home settings.

Interviews

Interviews were conducted with the participant’s parents, teachers, based on BDI-2, Oregon, Vineland-2.

Data Analysis

Developmental and adaptive assessment measures were administered and scored. Structured play observations were scheduled and simultaneously coded using the ISBS and the POS. The ISBS and the POS are designed to facilitate coding of the frequency of behaviours. The videotaped data were analysed by two persons. They watched and recorded independently first, then watched tapes again together with comparing their analysis. If they had different results, they would return to the manual of BDI and consider coding the participant’s play behaviour until they could reach agreement.

Results

Developmental assessment

The BDI-2 (Newborg et al. 2005) and the OR (Brown et al. 1991) were used for the developmental assessment. Table 1 presents summary of the domain scores attained by Participant A, and Table 2 presents a summary of the domain scores attained by the Participant B on the BDI, which is a norm-referenced instrument that provides raw scores, percentile ranks, scaled scores, developmental quotient, 95% confidence intervals and age equivalents.

Table 1: Participant A's summary profile on the Battelle Developmental Inventory-II at age 59 months (4.11 years)

Domains and subdomains	Age equivalent		Raw Score	Percentile rank	Scaled Score	Developmental Quotient	95% Confidence Interval
	Year-month	Months only					
Adaptive							
Self-care	5-1	61	62	75	12		
Personal Responsibility	3-9	45	18	16	7		
<i>Total</i>				45	19	98	90 to 106
Personal-social							
Adult interaction	5-7	67	56	84	13		
Peer interaction	3-3	39	27	5	5		
Self-concept and social role	3-6	42	56	16	7		
<i>Total</i>				34	25	94	89 to 99
Communication							
Receptive communication	3-8	46	46	9	6		
Expressive communication	3-4	40	49	9	6		
<i>Total</i>				13	12	83	78 to 90
Motor							
Gross motor	4-11	59	80	75	12		
Fine motor	3-4	40	42	1	3		
Perceptual motor	2-0	24	14	<1	2		
<i>Total</i>				6	17	77	71 to 87
Cognitive							
Attention and Memory	2-4	28	36	<1	1		
Reasoning and academic skills	2-4	28	14	<1	2		
Perception and Concepts	2-7	31	22	<1	1		
<i>Total</i>				0.2	4	57	53 to 67
<i>BDI Total</i>				5	77	75	72 to 98

Table 2: Participant B's summary profile on the Battelle Developmental Inventory-II at age 57 months (4.9 years)

Domains and subdomains	Age equivalent		Raw Score	Percentile rank	Scaled Score	Developmental Quotient	95% Confidence Interval
	Year-month	Months only					
Adaptive							
Self-care	2-4	28	39	<1	1		
Personal Responsibility	2-1	25	8	<1	2		
<i>Total</i>					3	58	53 to 69
Personal-social							
Adult interaction	1-8	20	36	<1	2		
Peer interaction	1-11	23	12	<1	1		
Self-concept and social role	2-4	28	36	<1	2		
<i>Total</i>					5	61	57 to 67
Communication							
Receptive communication	2-1	25	29	<1	1		
Expressive communication	2-2	26	32	<1	1		
<i>Total</i>					2	55	51 to 63
Motor							
Gross motor	2-7	31	63	<1	2		
Fine motor	0-9	9	33	<1	2		
Perceptual motor	1-11	23	13	<1	1		
<i>Total</i>					5	57	52 to 68
Cognitive							
Attention and memory	0-7	7	19	<1	1		
Reasoning and academic skills	-	-	4	<1	1		
Perception and concepts	0-7	7	9	<1	1		
<i>Total</i>					3	55	51 to 65
<i>BDI Total</i>				<0.1	18	48	46 to 52

Table 3 presents a summary of Participant A's performance, and Table 4 presents a summary of Participant B's performance on the OR, which is a criterion-referenced instrument that provides 'estimated age function levels' only.

Table 3: The Oregon Project (OR) for Visually Impaired and Blind Preschool Children: Summary of Participant A's performance at the age of 52 months (4 years, 4 months).

Domain	Birth-2 years		2-3 years		3-4 years		4-5 years		5-6 years	
	N	%	N	%	N	%	N	%	N	%
Cognitive	22	100	15	100	10	63	6	38	0	0
Language	23	100	10	56	10	67	6	46	4	27
Social-emotional	21	100	8	100	10	83	2	22	6	50
Compen-satory	15	100	7	100	5	63	4	29	1	6
Self-help	24	100	19	86	9	82	10	71	7	41
Fine motor	25	100	8	62	4	40	3	30	0	0
Gross motor	32	100	12	86	14	58	-	-	2	13

Legend: N – total number of skills, % – percentage of attained skills.

The results are described in terms of age-functioning levels. Participant A demonstrated some skills moderately below or below her age level in all domains in the BDI-2 and the OR (see Tables 1 and 3), but above her age level in the self-care, adult interaction and gross motor subdomains of the BDI. She demonstrated a delay especially in the perceptual motor domain on BDI instruments.

Participant B demonstrated skills below her age level in all domains in the BDI-2 and the OR (see Tables 2 and 4). The highest age level subdomain demonstrated was gross motor, and the lowest domain was cognitive and fine motor.

Table 4: The Oregon Project (OR) for Visually Impaired and Blind Preschool Children: Summary of Participant B's performance at the age of 50 months (4 years, 2 months).

Domain	Birth-2 years		2-3 years		3-4 years		4-5 years		5-6 years	
	N	%	N	%	N	%	N	%	N	%
Cognitive	17	77	5	33	3	19	0	0	0	0
Language	23	100	9	50	10	67	6	46	5	29
Social-emotional	12	57	4	50	8	67	3	33	5	42
Compen-satory	15	100	4	57	3	38	1	7	1	6
Self-help	20	83	15	68	6	55	0	0	0	0
Fine motor	21	84	6	46	6	60	2	20	0	0
Gross motor	32	100	8	57	4	33	2	7	1	7

Legend: N – total number of skills, % – percentage of attained skills.

In the fine motor domain of the BDI-2, the participants were unable to demonstrate skills such as folding paper, copying lines and shapes, and cutting on a line with scissors. The OR identifies several of these skills as typically delayed in children who are visually impaired.

Adaptive behaviour assessment

Table 5 presents a summary of Participant A's scores and Table 6 presents a summary of Participant B's scores on the VABS classroom edition (Sparrow et al. 1983).

Table 5: Vineland Adaptive Behaviour Scales (Classroom edition): Summary of Participant A's performance ant the 52 months (4 years, 4 months)

Subdomain	Raw score	Standard Score	Adaptive level	Age equivalent
Receptive	19		High	8 years, 4 months
Expressive	37		Moderately low	3 years, 4 months
Written	0		Low	1 years, 6 months
Communication domain	56	89		3 years, 2 months
Personal	38		Moderately low	3 years, 0 months
Domestic	2		Low	2 years, 1 months
Community	8		Low	2 years, 5 months
Daily living skills domain	48	72		2 years, 9 months
Interpersonal relationships	18		Moderately low	2 years, 7 months
Play and leisure time	9		Moderately low	1 years, 6 months
Coping skills	4		Moderately low	2 years, 2 months
Socialization domain	31	74		2 years, 4 months
Gross	22		Moderately low	3 years, 3 months
Fine	15		Moderately low	3 years, 3 months
Motor skills domain	37	75		3 years, 6 months
Sum of domain scores		301		
Adaptive behaviour composite		72	Moderately low	

Participant A scored moderately below her chronological age level in the socialisation and motor domains. In the daily living skills domain, she scored below her chronological age. Participant B scored moderately below her chronological age level in the socialisation domain and below her chronological age level in the domains of communication, daily living skills and motor skills.

Table 6: Vineland Adaptive Behaviour Scales (Classroom edition): Summary of Participant B's performance ant the 52 months (4 years, 4 months)

Subdomain	Raw score	Standard Score	Adaptive level	Age equivalent
Receptive	18		Adequate	5 years, 5 months
Expressive	25		Moderately low	2 years, 3 months
Written	0		Low	1 years, 6 months
Communication domain	43	74		2 years, 4 months
Personal	32		Low	2 years, 6 months
Domestic	0		Low	1 years, 6 months
Community	1		Low	Before 1 year
Daily living skills domain	33	66		2 years, 1 months
Interpersonal relationships	14		Moderately low	2 years, 0 months
Play and leisure time	9		Moderately low	1 years, 6 months
Coping skills	4		Moderately low	2 years, 2 months
Socialization domain	27	71		2 years, 1 months
Gross	13		Low	1 years, 8 months
Fine	6		Low	1 years, 8 months
Motor skills domain	19	60		1 years, 8 months
Sum of domain scores		271		
Adaptive behaviour composite		65	Low	

Play-based observations

Participant A was observed during free play in the special school for visually impaired (70 minutes) and at home settings (30 minutes) for a total of 100 minutes (10 minutes per session) over one-month period. Participant B was observed during free play in the special school for the visually impaired (60 minutes) and in the preschool settings (40 minutes) for a total of 100 minutes (10 minutes per session) over one-month period. Observations were recorded in 10 one-minute intervals. The observations were analysed using the Play Observation Scale (POS; Rubin 2001) and the Individual Social Behavior Scale (ISBS; Guralnick & Groom 1987).

Special school for visually impaired

In the special school setting, Participant A spent 28.6% of the total time in solitary play engaged in exploratory activities, e.g. she sat away from her peers. She spent approximately 45.7% of the total time in parallel play. She played independently, engaged mostly in constructive activities. She spent 17.1% of the total time in child-initiated and child-monitored group play, engaged in functional activities such as setting miniatures of foods (vegetables, fruits, sweets etc.) on the table preparing dramatic activities and dramatic play, for example going to the shop (she played a shop girl or a customer).

In the special school setting, the Participant B spent 41.7% of the total time in solitary play while engaged in exploratory and functional activities. For example, she sat away from her peers, touching a part of a toy with her hands. She kept on touching only one thing until someone would pass another object to her. She spent approximately 46.7% of the total time in parallel play. During this time, she listened to peers and teacher's speech or conversation and sounds around her, and often responded to them. If a peer said, 'I had an egg for breakfast in this morning', she said, 'I also had an egg this morning' or 'I like eggs', but it was in too low a voice for her peers to hear. If a teacher said 'Put the toys back on the shelf. Let's go outside', to other children, the girl said 'Yes' and stood up quickly and tried to put her shoes on without putting toys away. She spent 3.3% of the total time in child-initiated and child-monitored group play, engaged in dramatic activities. She held a shopping bag in her arm, took a fish and said 'I'd like to buy this' to a peer (shop girl), took money from her purse and stretched out her arm towards the peer.

Home

Participant A engaged 60% of the total time in solitary play, though her brother or a friend were present in the same room. They tried to follow her activities many times, but she did not care about what they were doing. She often moved from one room to another and seemed like moving without any purpose, but she played by herself in her own story. She said to herself: 'I'm so busy. I must hurry!' and ran to another room or: 'Oh, the TV program has started. I have to watch it. Turn on the TV... That's it. OK, sing and dance.' She spent 16.7% of the time observed in parallel play, engaged in functional and dramatic activities. Sometimes her friend could join her dramatic activities, for example when she carried a picnic bag on her back, and her friend imitated her and followed her. Sometimes it seemed like a group play, but the girl did not actually care about her friend's presence,

so it was not coded as a group play. Because of that the girl was not observed in a group play.

Preschool

In preschool, Participant B engaged 25% of the total time in solitary play, while engaged in functional activities. She spent 45% of the time observed in parallel play, engaged in functional activities (such as knocking two blocks together, touching some part of a doll) in one session and in dramatic activities (she got into a cat and ate a fish); 15% of the time she engaged in a group play.

An examination of specific interactions with peers yielded some interesting patterns of behaviour. Participant A (see Figure 1) led peers both directly and indirectly in both settings (special school and home). She actively sought the attention of peers and actively responded to peer’s attention-seeking behaviour in the special school setting. In addition, Participant A often tried to use someone as a resource. For example, she often asked someone: ‘What is this?’ or ‘What colour is it?’ However, we did not count these questions as peer interactions because she did not call any names, and it was impossible to identify if it was a peer interaction or not.

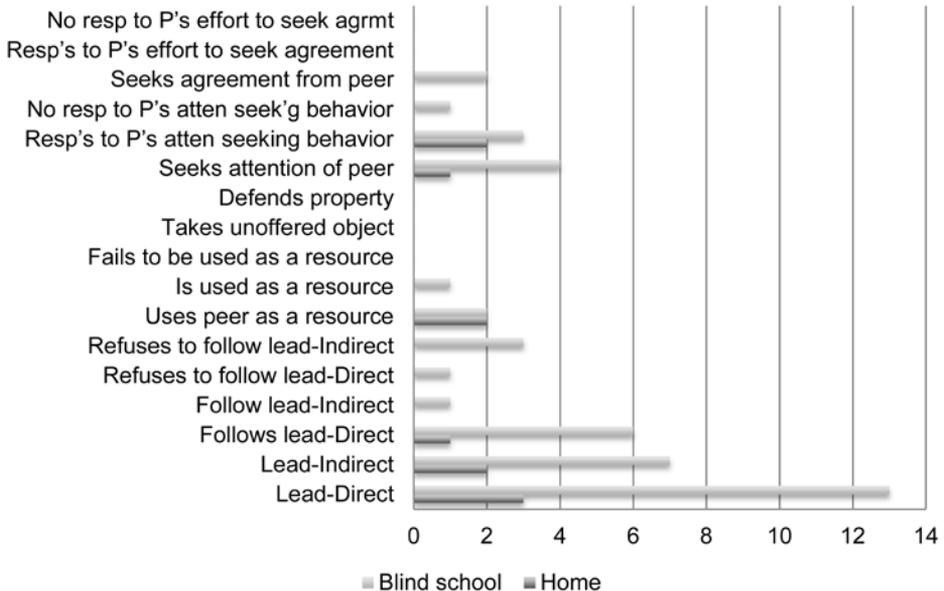


Figure 1: Individual Social Behavior ISBS (Participant A)

Participant B (see Figure 2) expressed directly and indirectly following behaviours in social activities 12 times. She refused to follow peer’s lead four times. She responded to peer’s attention-seeking behaviour twice and did not respond to a peer’s attention-seeking behaviour seven times.

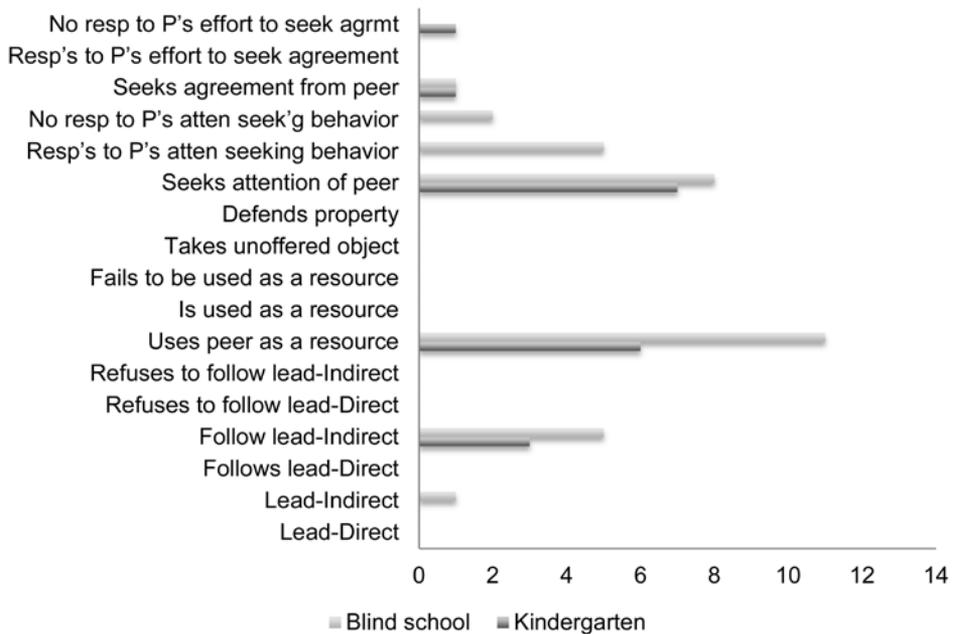


Figure 2: Individual Social Behavior ISBS (Participant B)

Discussion

There are several limitations to this study. There were teachers present most of the time during free play. The interaction between the participants and the teachers was not adapted to coding, although the frequency of social interactions might have been influenced by the teacher's presence.

In order to solve the nature of the single-case design, this study adopted two participants but the generalisability of the results of this study may still be limited. Furthermore, the instrumentation included the use of the BDI-II (Newborg et al. 1988) and the VABS (Sparrow et al. 1983), neither of which included visually impaired children in its normative sample.

The literature has shown that delays in language, motor, or cognitive domains can have a direct impact on a child's social competence (Guralnick 1990; Guralnick 1999b; Rettig 1994). The results of participants' developmental assessment in this study supported the literature. They did not exhibit any stereotypic or "negative behaviours", such as anxiety (crying or whining), hovering, aggression (antagonistic behaviour), or excessive rough-and-tumble play that can have a detrimental effect on social interactions (Rubin 2001). Nevertheless, they demonstrated limited play behaviours and compromised social interactions.

The results of this study support the findings of previous research (Erwin 1993; Rettig 1994; Skellenger & Hill 1994; Troster & Brambring 1993, 1994; Warren 1984).

Participant A demonstrated predominantly (60%) solitary play behaviour at her home and 29% in the special school. She spent most of the total time she was observed engaged in non-social play and only 3% of the time in social play at home. Participant A often used others as a resource. Losing her sight at the age of three might be a reason for asking others. It is possible that she knew colours, and she wanted some information about them. Alternatively, she might not have enough ability to explore things by herself so she wanted to get information about something she could not be certain of (Sakamoto 1991). Furthermore, this situation might make her play more independently than with peers. She was learning how to obtain information through all her other senses by compensation. She needed more time to play by herself (Rubin 2001) and to explore the surrounding environment (Skellenger & Hill 1994).

Participant A spent significantly more time engaged into parallel play in the special school and solitary play at home. Participant B spent significantly more time in group play in preschool. Though there were variations in the quality and frequency of play behaviours, they were different in each setting. The analysis of social interaction showed that Participant A more frequently expressed behaviours like “leads in peer activities”, “follows lead of a peer”, “seeks attention of a peer” or “responds to a peer’s attention-seeking behaviour” in special school setting rather than at home. Participant B more frequently expressed behaviours such as “follows the lead of a peer”, “fails to respond to a peer’s attention-seeking behaviour” or “refuses to follow the lead of a peer” in preschool rather than in the special school. The behaviours “fails to respond to a peer’s attention-seeking behaviour” and “refuses to follow the lead of a peer” are negative behaviours, but both of them occurred by peer’s initial interaction to Participant B. The results of this study support the findings of previous research (Shirai & Kobayashi 2005).

Notes

The article is based on the bilateral project ‘Social inclusion of visually impaired children in different cultural settings’ (ARRS: BI-JP/09-11-003). Authors thank Ms Masue Yamaki for her contribution to the research.

References

- Adelson, Edna & Selma Fraiberg. 1974. Gross motor development in infants blind from birth. *Child Development* 45: 114–26.
- Brown, Donnise, Vickie Simmons, Judy Methvin, Sharon Anderson & Sue Boigon. 1991. *The Oregon Project for Visually Impaired and Blind Preschool Children*. Medford, OR: Jackson Education Service District.
- Brownell, Celia A. 1986. Convergent developments: Cognitive-developmental correlates of growth in infant/toddler peer skills. *Child Development* 57(2): 275–86.
- Celeste, Marie. 2006. Play behaviors and social interventions of a child who is blind: In theory and practice. *Journal of Visual Impairment & Blindness* 100: 75–90.
- Erwin, Elizabeth J. 1993. Social participation of young children with visual impairments in specialized and integrated environments. *Journal of Visual Impairment & Blindness* 87(5): 138–42.
- Gresham, Frank M. 1981. Social skills training with handicapped children: A review. *Review of Educational Research* 51(1): 139–76.
- Guralnick, Michael. 1990. Peer interactions and the development of handicapped children’s social and communicative competence. In: Foot, Hugh C., Michelle J. Morgan & Rosalyn H. Shute (eds.), *Children helping children*. Sussex: John Wiley & Sons, pp. 275–305.

- Guralnick, Michael. 1999a. Family and child influences on the peer-related social competence of young children with developmental delays. *Mental Retardation and Developmental Disabilities Research Review* 5: 21–9.
- Guralnick, Michael. 1999b. *The assessment of peer relations*. Seattle: University of Washington Press.
- Guralnick, Michael, Robert T. Connor, Mary Hammond, John M. Gottman & Kelly Kinnish 1996. Immediate effects of mainstreamed settings on the social interactions and social integration of preschool children. *American Journal on Mental Retardation* 100: 359–77.
- Guralnick, Michael, Groom, J. 1987. The peer relations of mildly delayed and nonhandicapped preschool children in mainstreamed playgroups. *Child Development* 58: 1556–72.
- Guralnick, Michael, Hammond, M., Connor, R. 2003. Subtypes of nonsocial play: Comparisons between young children with and without developmental delays. *American Journal on Mental Retardation* 108: 347–62.
- Inohira, M. 1992. Mōgakkō yōchi-bu no yōchien hoikujo to no renkei ni okeru kyōiku sentā-teki kinō no arikata ni tsuite [About the nature of educational centre functions in cooperation with kindergartens and blind kindergartens]. *Tsukubadaigaku yōgo kunren kenkyū* 5: 55–62.
- Kekelis, Linda S., Sharon Zell Sacks. 1988. Mainstreaming visually impaired children into regular education programs: The effects of visual impairment on children's social interactions with peers. In: Sharon Zell Sacks, Linda S. Kekelis & Ross J. Gaylord-Ross (eds.), *The development of social skills by visually impaired children*. San Francisco: San Francisco State University, pp. 59–82.
- Kuramochi, K. 1994. Shūgakumae-ji no asobi shūdan e no nakamairi katei [Pre-schooler's entry process into the play group]. *Hattatsu shinri-gaku kenkyū* 5(2): 137–44.
- Kuramochi, K. & T. Shibasaka, T. 1995. Yōchien ni okeru nakamairi to kakawari no hen'yō [Transformation of involvement in joining of kindergarten]. *Nihon hoiku gakkai taikai ronbun-shū* 48: 836–7.
- McConnell, Scott R. & Samuel L. Odom. 1999. A multimeasure performance-based assessment of social competence in young children with disabilities. *Topics in Early Childhood Special Education* 19(2): 67–74.
- McFall, Richard M. 1982. A reformulation of the concept of the social skill. *Behavioral Assessment* 4: 1–33.
- Newborg, Jean, John Stock, Linda Wnek, John Guidibaldi & John Svinicki. 1988. *Battelle Developmental Inventory (BDI)*. Allen, TX: DLM.
- Nihon tokushukyouiugakkai shougaijikyōuiku shisutem kenkyū iinkai. 1995. Shougaijikyōuiku shisutem kenkyū iinkai kenkyū seika houkoku(2): Mougakkou to chiikitonou kouryu: kyōryōkuni kansuru chousa [The reports of committee of education system for children with disabilities: The research about intercommunion and cooperation between the blind school and community]. *The Japanese Journal of Special Education* 33(3): 77–81.
- Parsons, Sandy. 1986. Function of play in low vision children: Part 2: Emerging patterns of behavior. *Journal of Visual Impairment & Blindness* 80: 777–84.
- Pogrud, Rona L. & Diane L. Fazzi. 2002. *Early focus: Working with young children who are blind or visually impaired and their families (2nd edition)*. New York: American Foundation for the Blind.
- Rettig, Michael. 1994. The play of young children with visual impairments: Characteristics and interventions. *Journal of Visual Impairment & Blindness* 88: 410–20.
- Rubin, Kenneth H. 2001. *The play observation scale (POS) (revised)*. College Park: University of Maryland.
- Rubin, Kenneth H. & Robert Coplan. 1992. Peer relationships in childhood. In: Marc Bornstein & Michael Lamb (eds.), *Developmental psychology: An advanced textbook (3rd edition)*. Hillsdale, NJ: Lawrence Erlbaum, pp. 519–78.
- Sacks, Sharon K., Linda S. Kekelis & Robert J. Gaylord-Ross (eds.). 1992. *Development of social skills by blind and visually impaired students: Exploratory studies and strategies*. New York: American Foundation for the Blind.
- Sakamoto, Y. 1991. Shitsumei-ji no shinri-tekina mondai [Psychological problems of blindness]. In: Yasumasa Sato (ed.), *Shikaku shōgai-gaku nyūmon [Introduction to Visual Disability Studies]*. Tokyo: Gakugeitoshō, pp. 156–60.
- Shirai, Y., Kobayashi, H. 2005. Strategies were used by infants with visual impairments to gain entry into peer groups – Observation of two Blind infants in mainstreaming preschool setting. *The Bulletin of the special needs education research and practice* 4: 31–40.
- Skellenger, Annette, Everett W. Hill. 1994. Effects of a shared teacher-child play intervention on the play skills of three young children who are blind. *Journal of Visual Impairment & Blindness* 88: 433–45.

- Sparrow, Sara, David A. Balla, Domenic V. Cicchetti. 1983. *Vineland Adaptive Behavior Scales (VABS)*. Circle Pines, MN: American Guidance Service.
- Takahashi, S. 2010. *Study about a role kindergarten program in Special School for visually impaired for support from early childhood – Analysis of investigation about kindergarten program in Special School in Japan*, Unpublished M.A. thesis. Tsukuba: University of Tsukuba, Graduate School of Education.
- Troster, Heinrich & Michael Brambring. 1993. Early motor development in blind infants. *Journal of Applied Developmental Psychology* 14: 83–106.
- Troster, Heinrich & Michael Brambring. 1994. The play behavior and play materials of blind and sighted infants and preschoolers. *Journal of Visual Impairment & Blindness* 88: 421–32.
- Tremblay, Ann, Philip Strain, Jo M. Hendrickson & Richard E. Shores. 1981. Social interactions of normally developing preschool children: Using normative data for participant selection and target behavior selection. *Behavior Modification* 5: 237–53.
- Warren, David H. 1984. *Blindness and early childhood development*. New York: American Foundation for the Blind.
- White, Burton L. & Jean C. Watts. 1973. *Experience and environment (vol. 1)*. Englewood Cliffs, NJ: Prentice Hall.

Povzetek

V članku raziskujemo igro in socialne interakcije dveh slepih predšolskih deklic brez dodatnih posebnih potreb. Rezultati, pridobljeni na osnovi ocenjevalnih protokolov, so pokazali omejene igralne vzorce in socialne interakcije. Rezultati poudarjajo raznolikost socialnih kompetenc pri majhnih otrocih z okvarami vida.

KLJUČNE BESEDE: otroštvo, slepota, vedenje v igri, socialne interakcije

CORRESPONDENCE: DARJA KOBAL GRUM, University of Ljubljana, Faculty of Arts, Department of Psychology, Aškerčeva 2, SI-1000 Ljubljana, Slovenia, E-mail: darja.kobal@ff.uni-lj.si.