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The Social Behaviours of
Visually Impaired Preschool Children

by

© Alison D. Crocker

B.A. Hons., University of Winnipeg, 1984

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the
Requirements for the Degree
of Master of Arts at the
University of Windsor
Windsor, Ontario, Canada
1989



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ISBN 0-315-50549-4

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Abstract

In the present study, the social behaviours of visually impaired children in a variety of preschool programs was examined. To date, little empirical literature is available regarding the participation of these children in preschool programs. In general, those studies that are available indicate that the integration of visually impaired children is associated with difficulties.

Nine visually impaired children, representing 90% of visually impaired children attending preschool programs in the tri-county area of south-western Ontario, and nine sighted children participated in the study. Children were observed as they participated in their day care routine using a Behaviour Observation Record. The primary caretaker of each child participating in the study was interviewed with the Vineland Adaptive Behavior Scale-Survey Edition and a questionnaire specially developed for this study. Teachers also completed the Vineland Adaptive Behavior Scale-Classroom Edition and a questionnaire similar in content to the Parent Questionnaire for each child involved in the study.

Paired t-test comparisons of the Behaviour Observation Record indicated that the visually impaired children made fewer initiations to others and were more likely to be the recipient of a teacher interaction than were the sighted children. Also, the visually impaired children were observed to be near a preschool teacher more often than the sighted target children.

Although differences were observed, the visually impaired and sighted target children initiated or responded to interactions using a variety of means of communication, suggesting that the visually impaired children have acquired basic communication skills. In addition, teachers did not interact with either group of target children differentially, suggesting that teachers made similar demands of the visually impaired and sighted target children.

Overall, the behaviour observation data indicated that the visually impaired children were not as involved in the preschool program as the sighted children. This observation has implications for the integration of visually impaired children in preschool programs. For example, integration is believed to benefit both handicapped and nonhandicapped children by providing them with opportunities to interact with each other. The low levels of interaction observed in this study suggest that more program planning may be necessary to maximize the social opportunities available for

these children.

In addition to demonstrating low levels of social involvement, the visually impaired children were rated as having significantly less well developed adaptive skills than the sighted target children on the Vineland Adaptive Behavior Scale by both parents and teachers. However, teachers provided a more positive evaluation of the visually impaired children's adaptive skills. This finding reflects positively on the potential for successfully integrating visually impaired children in regular and rehabilitative programs. For example, the teachers' positive evaluations of the visually impaired children suggests an appreciation of each child's abilities and strengths to participate in the preschool routine, a basic starting point for successful integration.

In addition, none of the teachers interviewed with the Teacher Questionnaire indicated any significant difficulties with the enrollment of visually impaired children in their preschool programs. For example, teachers evaluated the participation of the visually impaired children favorably, and saw their enrollment in the preschool as a positive and challenging experience. Parents of the visually impaired children echoed the perceptions of the preschool teachers, speaking highly of their child's program and teachers.

It is evident from the findings of this study that the integration of visually impaired children in preschool programs can be successful, and that the parents and teachers interviewed in this study support this endeavour. However, given the observed differences in the level of participation between the visually impaired and sighted target children, program development to encourage and maximize interactions between these children appears to be a necessity. Without such programs, the low levels of involvement observed in this study is likely to continue to occur.

Acknowledgements

This thesis is dedicated to the children, parents and preschool programs who gave of their time, energy and love so that this research project could become a reality.

This research was supported by a Doctoral Fellowship from the Social Sciences and Humanities Research Council of Canada, May 1988.

I would like to express my appreciation to my thesis committee, Dr. Anne McCabe, Dr. Noel Williams and especially my chair, Dr. Robert Orr for their support in completing this project.

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CHAPTER I

INTRODUCTION

The purpose of this study was to examine the social behaviours of visually impaired children in a variety of preschool programs through direct observation, parent interviews, and teacher interviews. The goal was to provide a comprehensive analysis of those conditions which facilitate or impede the social interactions between visually impaired children and their sighted peers.

To date, little empirical literature is available regarding the participation of visually impaired children in preschool programs. A majority of the literature which is available tends to focus on the play behaviour (e.g. Olson, 1981; Parsons, 1986; Tait, 1972a, Tait, 1972b) or language deficits (Erin, 1986; McGinnis, 1981) of visually impaired children, rather than on patterns of interaction or participation in the preschool setting. In addition, the few studies that have looked at participation have done so from different perspectives, and have been somewhat negative in terms of outcome (e.g. Simon & Gillman, 1979; Tait & Wolfgang, 1984; Workman, 1986).

Reasons for the limited amount of research available

with visually impaired children includes the very small numbers of children with visual impairments alone, or in combination with other impairments (Gardner, Morse, Tulloch & Trief, 1986). Also, the relatively small number of visually impaired preschool children (Gardner, et al., 1986) generally dictates that they be served in diverse preschool settings making comparisons and generalizations difficult. For example, visually impaired children may be enrolled in programs which serve primarily nonhandicapped children, or in programs which focus on rehabilitation, with the preschool population being very diverse or heterogeneous. This diversity of preschool placements poses additional problems in terms of studying participation at the preschool level.

Finally, part of the difficulty in conducting research with this population stems from the heterogeneity of visually impaired preschool children. Visual impairment may range from no functional vision to some useful vision (Alonso, Moor, Raynor, Hippel, & Baer, 1986). For example, a visually impaired child may be able to perceive light, the outlines of objects, or may have sufficient vision to read print with assistance (Alonso et al., 1986). Even though a child may possess some functional vision, variations may be noted in the degree to which a child uses this capacity (Genshaft, Dare, & O'Malley, 1980; Lowenfeld, 1948; Truan 1984). In addition, detailed ophthalmologic information is

often unavailable for preschool age children, making accurate classification difficult (Davidson, 1986). This factor is also confounded by the lack of an adequate definition of blindness and visual impairment accepted worldwide (Davidson, 1986).

Visual impairment may result from accidental injury, prematurity, (Alonso et al., 1986), prenatal retinopathies, congenital cataracts, optic nerve disease, (Davidson, 1986), or from other syndromes or diseases such as maternal rubella, spina bifida, or Marfan's Syndrome which produce predictable multiple impairment patterns (Truan, 1984). Other handicaps often associated with visual impairment include hearing impairments, cerebral palsy, heart defects and brain damage (Alonso et al., 1986).

Although visually impaired preschool children represent a very diverse group, there do appear to be some commonalities which may interfere with their participation in the preschool setting. For example, visually impaired preschool children are believed to show some degree of delay in the acquisition of play, language, and social skills development (Alonso et al., 1986; Fraiberg, 1975; Lowenfeld, 1948; Scott, 1969). According to Alonso et al., (1986) these children may evidence delay in only one domain, or in several.

For example, Olson (1981) compared the exploratory play behaviours of visually impaired and sighted preschool

4

children when given a novel and conventional toy. She reported that the visually impaired children were significantly less aggressive in their exploratory searches, initiating fewer actions on the novel toy and using their hands to a significantly lesser degree than the sighted children.

Andersen, Dunlea and Kekelis (1984) examined the language development of visually impaired children and determined that there were early differences in how blind children understood and used language. For example, the blind children asked many "wh" questions, repeated what was said to them, and demonstrated a lack of perspective taking in conversation when compared to the sighted children. The blind children also demonstrated poor class inclusion and concept development. These findings parallel observations made by Lowenfeld (1948) 36 years earlier.

Visually impaired children may also experience difficulty using personal pronouns such as "I, you, and me" (Anderson et al., 1984; Santin & Simmons, 1977; Talk to Me II, undated). Lack of pronoun use has been attributed to the poor development of a sense of self (Fraiberg, 1975; Santin & Simmons, 1977), and to a poor language environment (Talk to Me II, undated). For example, parents of visually impaired children may drop the use of pronouns when speaking to their children (Talk To Me II, undated). However, McGinnis (1981) observed that her sample of visually

impaired preschool children had acquired the concept of personal reference, but were not as proficient as sighted children in using this skill.

McGinnis (1981) also noted the limited use of hand and other nonverbal gestures during conversation. She concluded that her sample of visually impaired children did not comprehend the communicative capacity of gestures during conversation. Lowenfeld (1948) has suggested that the lack of facial expressions and gestures characterizing the social interactions of visually impaired children may be interpreted as lack of interest or apathy by sighted children.

Other behaviours that may interfere with participation in the preschool setting include mannerisms or blindisms. Mannerisms may be compensatory actions to make up for the lack of visual stimulation, to provide relief from pain, or to provide pleasurable sensations (Alonso et al., 1986, Harrison, 1978). These behaviours may involve eye poking, fluttering the fingers or hands in front of the eyes, jerking the head back and forth, or rocking the whole body (Alonso et al., 1986; Harrison, 1978). Also, behaviours such as tongue clicking, hand clapping and foot stomping, which non-handicapped children find unpleasant, may be used to gain auditory information about the surroundings (Alonso et al., 1986).

Because visually impaired children demonstrate a wide

range of difficulties, various programs and educational facilities have been established to assist these children. For example, there is a variety of resource books and how-to-guides to help parents and teachers of visually impaired children (e.g. Ferrel, 1986; Harrell & Kinsom, 1987; Swallow & Huebner, 1987). Also, Jastrzemska, (1984) has prepared a bibliography of available resources for teachers and special needs educators. Specialized programs have also been developed expressly for parents and their visually impaired children. An example is the Blind Children's Center in Los Angeles (Talk to Me II, undated). Visually impaired children are also being integrated into existing preschool programs such as Headstart in the United States (Alonso et al., 1986), and some day care facilities in Canada.

Integration currently seems to be the placement of choice for most handicapped children (New Directions in Child Care, undated; Sandys & Piet, 1986). Many studies examining the integration of physically or mentally handicapped children report successful integration, (e.g. Guralnick, 1978; Ispa & Matz, 1978). For example, recent research indicates that integrated special needs or handicapped children may show more appropriate social and play behaviours (Devoney, Guralnick & Rubin, 1974; Dunlop, Stoneman, & Cantrell, 1980; Ispa & Matz, 1978; Wilton & Densen, 1977), enhanced language development (Fredericks, Baldwin, Grove, Moore, Riggs, & Lyons, 1978; Guralnick,

1978), and greater acceptance by non-handicapped peers (Guralnick & Rubin, 1974; Ispa & Matz, 1978; Pol, Crow, Rider & Offner, 1985).

Integration is believed to be effective because non-handicapped peers act as role models (Apolloni & Cooke, 1978; Guralnick, 1978), or specialized tutors providing instruction (Devoney et al., 1974; Guralnick, 1978) for the handicapped children. Nonhandicapped children also provide opportunities for active play and positive interaction (Wasson & Austin, 1980) as well as opportunities for the handicapped child to practice their newly acquired language and social skills (Guralnick, 1978; Howes, 1985; Ispa & Matz, 1978).

Both handicapped and non-handicapped children are believed to benefit from integration (Field, Roseman, De Stefano, & Koewler, 1981; Sandys & Piet, 1986). Also early intervention is believed to facilitate greater gains than is integration at a later age (see Fraiberg, 1975; Hourcade & Parette, 1986).


The majority of these studies, however, have not addressed the integration of visually impaired preschool age children. The studies (Simon & Gillman, 1979; Tait & Wolfgang, 1984; Taylor-Hershel & Webster, 1983; Workman, 1986) that have examined the preschool participation of visually impaired children have done so from different perspectives, making generalizations difficult. One common

finding of these studies, however, is that there are difficulties associated with the assimilation of visually impaired children into preschool programs.

For example, Simon and Gillman (1979) reported that attempts to integrate four visually impaired children into a regular preschool program resulted in several problems. The introduction of the visually impaired children was found to be an anxiety provoking experience for both the teachers and sighted children. Simon and Gillman also noted that the non-handicapped children expressed concern over becoming blind and demonstrated increasing avoidance behaviours of the visually impaired children as the program progressed. The authors recommended that extensive preparation of both the non-handicapped children and teachers was vital for successful integration.

In a later study, Tait and Wolfgang (1984) recorded the concerns of teachers as a visually impaired three-year-old child was integrated into a regular preschool setting. Teachers expressed concern with the child's mouthing of objects, her passivity in not initiating contact or play, of not following the others during circle time and rejecting the advances of other children to come and play.

Tait and Wolfgang also reported that the nonhandicapped children demonstrated some difficulties with the visually impaired child. These included trying to help the child too much, physically forcing their attentions on her or



competing for her attention, viewing her as a baby during play, or avoiding attempts by the blind child to touch them (Tait & Wolfgang, 1984).

More recently, Workman (1986) has focused on teacher behaviours, especially the types of teacher verbalizations which facilitated interactions between visually impaired preschool children and their non-handicapped peers. Teacher verbalizations most useful to the visually impaired children were descriptions of the social environment and direct prompts ("give the patient some medicine"). Workman (1986) believes that these strategies help the visually impaired children structure their environment and thereby increase the probability for successful interaction. However, Workman (1986) noted that when the teacher did not attend to the visually impaired child or his peer group, peer interactions were unlikely to occur. This suggests that the teacher's presence is at least necessary to facilitate or encourage interactions between visually impaired and non-handicapped children.

Finally, Taylor-Hershel and Webster (1983) reported the successful integration of a three year old visually impaired boy into a Montessori Preschool. Some of the difficulties mentioned by Simon and Gillman (1979) and Tait and Wolfgang (1984) were also noted by these authors. The sighted children expressed fears about blindness, and initially rebuffed or ignored the visually impaired child's attempts

at participation. However, teacher modeling and prompts to both the sighted children and visually impaired child helped to facilitate social interactions, a finding also noted by Workman (1986).

Generally, the assimilation of visually impaired children into preschools with normally sighted children can be difficult, although some of these problems can apparently be overcome. For example, even though visually impaired children may be delayed in play (Olson, 1981; Tait, 1972a; Tait, 1972b), and language development (Andersen et al., 1984) and may engage in mannerisms (Harrison, 1978) or other behaviours contrary to appropriate social interactions (Alonso et al., 1986), structuring the preschool environment to encourage participation between the visually impaired children and their peers fosters more peer involvement. Structuring the preschool environment may involve teacher interventions such as describing the play environment and on-going activities to the visually impaired child, and modeling appropriate prosocial behaviours for this child and her/his peers.

Further support for the contention that assimilation can be successful comes from the work of Raver (1984) and Hendrickson, Gable, Hester, & Strain, (1985). Raver (1984) modified the head-droop of a three-year-old visually impaired child in an integrated preschool and found that the child's peers prompted and praised her for appropriate head

and eye orientation during and after intervention.

Hendrickson et al., (1985) reported efforts to improve the social and play skills of two severely handicapped preschool children, one of whom was visually impaired. Hendrickson et al., (1985) used a same-age peer as a role model and instructor and observed that after intervention the visually impaired child continued to initiate and respond prosocially with the nonhandicapped child.

The observations of Raver (1984) and Hendrickson et al., (1985) demonstrate the capacity of sighted children to support and reinforce appropriate social behaviours in visually impaired preschool age children. These two studies also illustrate the potential for using sighted peers in addition to teacher interventions to encourage the participation of visually impaired children in the preschool setting.

To gain a greater understanding of the current level of participation of visually impaired children enrolled in a variety of preschool programs, and the types of teacher and peer interactions that occur with these children, the present study utilized behaviour observations, the Vineland Adaptive Behavior Scales-Survey Form, the Vineland Adaptive Behavior Scales-Classroom Edition, and Parent and Teacher Questionnaires in preschools throughout a broad geographic area.

The behaviour observations provided a record of the

naturally occurring interchanges between visually impaired children and their sighted peers and teachers. The Vineland Adaptive Behavior Scales, Survey Form and Classroom Edition provided a comparison of the visually impaired preschool child's adaptive behaviours across the home and school environment, while the parent and teacher questionnaires permitted comparisons between parent and teacher perceptions of the degree of involvement of the visually impaired child in the preschool program. In addition, the behaviour observations and parent and teacher perceptions permitted a greater understanding of the components which facilitate or impede the successful participation of visually impaired preschool children.

The following hypotheses provided a framework for this research.

Hypothesis 1. On the basis of previous research it was predicted that the visually impaired children would spend more time alone, initiate interactions less frequently, and spend greater amounts of time interacting with their preschool teachers than with peers. In addition, visually impaired children were predicted to use gestures less often and to interact with other children for shorter durations than their sighted peers.

Hypothesis 2. On the basis of the assumption that teachers would be less biased than parents in their evaluations of the visually impaired children, it was

predicted that although parents and teachers would provide similar assessments of each visually impaired child's level of daily functioning on the Vineland Adaptive Behavior Scales, teacher estimates would be somewhat below that of the parent's estimate.

Hypothesis 3. On the basis of current beliefs that integration promotes and encourages participation, it was predicted that parents and teachers would overestimate the degree of involvement of the visually impaired children in the preschool program.

CHAPTER II

METHOD

Subjects

Nine visually impaired and nine sighted children from the tri-county area of south-western Ontario participated in the study. This represented 90% of the visually impaired children attending preschool programs in south-western Ontario. The demographic characteristics of the visually impaired and sighted children are presented in Table 1. The visually impaired children (ages 2 years 7 months to 6 years 3 months) were drawn from integrated settings serving nonhandicapped children and from rehabilitative preschools serving special needs children.

Teachers were asked to identify children enrolled in their preschool program who met specified criteria of visual impairment. These criteria included less than 20/70 correction in the best eye (Vision: Curriculum for Teachers, 1978), or children registered with the Canadian National Institute for the Blind as legally blind (20/200 or worse), (Blind Persons Act, 1962). Table 2 provides a description of the visual impairments of the visually impaired children. Each visually impaired child was matched with a same-

Table 1

Demographic Characteristics of the Visually Impaired and Sighted Children

Observation Dyad	Demographic Characteristics						
	Sex	Age (Mnths)	Useful Vision	Other Handicap	Estimate of Mobility	Length in Program (Mnths)	
(1)	VI	M	31	unknown	none	limited	03
	S	M	23	full	Develop- mental Delay	limited, beginning to crawl	12
(2)	VI	M	57	some	Cerebral Palsy	limited	30
	S	F	37	full	Cerebral Palsy	limited	12
(3)	VI	M	74	none	none	full	30
	S	M	63	full	none	full	24
(4)	VI	M	75	some	none	full	24
	S	M	63	full	none	full	30
(5)	VI	M	49	some	Cerebral Palsy	full, must wear helmet outside	24
	S	M	47	full	none	full	15
(6)	VI	F	41	unknown	Cerebral Palsy	limited, can roll across floor	18
	S	M	41	full	Soto Syndrome	full	17

Table 1 Continued

(7)	VI	F	51	some	Cerebral Palsy	limited, can roll across floor	24
	S	M	51	full	Developmental Delay	full	24
(8)	VI	M	70	none	none	full	24
	S	M	65	full	none	full	18
(9)	VI	F	39	some	none	full	04
	S	F	54	full	none	full	18

Table 2

Parents Description of Their Child's Visual Impairment

Child	Description of Visual Impairment
1	Cortical Blindness; may have peripheral vision in one eye; is too young at present to fully determine extent of useful vision.
2	Optic nerve damage; blind spots on both retinas (location unknown); poor eye muscle control.
3	Glaucoma and bilateral cataracts: no useful vision.
4	Cataracts; astigmatism; poor peripheral vision.
5	Retrolental fibroplasia with a profusion of blood vessels on the retina; wears glasses.
6	Degree of disability unknown, nystagmus; poor eye muscle control; possibly some peripheral vision.
7	Degree of disability unknown; wears bifocal contacts.
8	Glaucoma; no vision.
9	Rare disorder resulting in build up of protein on the retina; has some vision in one eye; is very light sensitive.

sexed, sighted peer from their preschool class. Teachers were asked to select a sighted peer most nearly average for the child's age group. Three sighted females and seven sighted males, ages 1 year 11 months to 5 years 5 months participated in the study. No significant differences were observed between the visually impaired and sighted children for age or length of time enrolled in a preschool program.

Children were observed in dyads to control for possible fluctuations in the preschool environment that might occur during a given observation period, and to facilitate data collection and comparisons between the visually impaired and sighted children.

Materials

The present study involved both behaviour observations and parent and teacher interviews. For the observations, a Behaviour Observation Record was developed. The Vineland Adaptive Behavior Scales-Survey Form, the Vineland Adaptive Behavior Scales-Classroom Edition and a Parent and Teacher Questionnaire developed for this study were used for the parent and teacher interviews.

Behaviour Observation Record. An event sampling format developed by Brownlee and Orr (personal communication, September 1987) was used to assess the social interactions of the children. For this study, modifications were made to the original behaviour categories based on empirical research data.

The following behaviour categories were used to describe the social interactions between the target child (visually impaired or sighted) and her/his peers and/or teacher: Antecedent Condition, Initiator, Recipient, Nature of the Initiation, Type of Initiation, Nature of the Response, Type of Response, and Duration. In addition, blindisms were recorded if they occurred during the behaviour observations. (See Appendix A for a copy of the Behaviour Observation Record Sheet).

Behaviour Observation Record Categories

Category 1

Antecedent Condition: number of children and/or teacher within 3 feet of the target child.

A= Alone

T= Teacher

1= One or two peers

G= Three or more participants

Category 2

Initiator: who initiated the interaction.

V= visually impaired target child

S= sighted target child

T= teacher

C= other sighted child

Category 3

Recipient: who received the initiation.

V= visually impaired target child

S= sighted target child

T= teacher

C= other sighted child

Category 4

Nature of the Initiation: whether the initiation was communicated by physical contact, gesture, vocalization or in combination.

P= Physical: touch, hit

G= Gestural: point, shrug

V= Verbal: words

C= Combinations of above

Category 5

Type of Initiation: content of the initiation.

R= Request: initiator requested assistance, or help. For example, "please give me the ball".

Q= Question: initiator asked for information. For example, "where is the book?".

C= Command (C): initiator told another what to do. For example, "stop that".

P= Positive: initiator made a positive overture not involving a request or question for the participation of another. For example "offers a toy".

A= Agonistic behaviour: initiator took a toy, hit or shoved another. For example,

"child grabs another child's doll".

O= Other: behaviours not falling into the above categories.

Category 6

Nature of the Response: whether the response was communicated by physical contact, gesture, vocalization or in combination.

P= Physical: touch, hit

G= Gestural: point, shrug

V= Verbal: words

C= Combinations of above

Category 7

Type of Response: content of the response.

N= No response.

H= Help: recipient offered help, instruction or direction. For example, "child helped teacher set up paint easel".

Co=Comply: recipient carried out request. For example, "child put away the toys".

C= Command: recipient told another child what to do. For example, "don't do that".

P= Positive: recipient made a positive response not involving help or comply. For example, "took toy offered to her/him".

A= Agonistic behaviour: recipient took a toy, hit or shoved another. For example, "knocks

over a tower of blocks".

Other (O): behaviours not falling into above categories.

Category 8

Duration: the number of interchanges (initiations plus responses) that occurred between two participants per observation interval.

Vineland Adaptive Behavior Scales. There are three versions of the Vineland Adaptive Behavior Scales available: the Interview Edition, Expanded Form, the Interview Edition Survey Form and a Classroom Edition. Each version measures adaptive behaviours across four domains, Communication (receptive, expressive and written subdomains), Daily Living Skills (personal, domestic and community subdomains), Socialization (interpersonal relationships, play and leisure time, and coping skills subdomains) and Motor Skills (gross and fine motor subdomains). The Expanded Form and Survey Edition are parent report measures. The Expanded Form provides a comprehensive assessment of a child's strengths and weaknesses, while the Survey Form offers a more general assessment of a child's adaptive behaviour. The Classroom Edition is completed by the child's teacher and provides an estimate of a child's adaptive behaviour in the classroom. Although supplementary norms are not available for visually impaired preschool age children, the Vineland Adaptive

Behavior Scales are a valuable assessment tool for identifying a child's level of adaptive functioning and permit a relative comparison of visually impaired children to the normative preschool population.

The Vineland Survey Form and the Vineland Classroom Edition were used in the present study. The Survey Form is a semistructured interview and was completed by the child's mother, the Classroom Edition is in questionnaire format and was completed by each child's preschool teacher.

Parent and Teacher Questionnaire. The Parent and Teacher Questionnaires were developed specifically for this study and were designed to parallel each other. The Parent Questionnaire (See Appendix B) was designed to elicit parents perceptions of their child's preschool program, the degree of involvement of their child in the program, and the ease with which participation had occurred. Also, the questionnaire was designed to supplement the information provided by the Vineland-Survey Edition by providing a comparison between the child's adaptive level of functioning and the parent's perception of the child's involvement in the preschool program.

The Teacher Questionnaire (See Appendix C) was designed to elicit teacher perceptions of each child's involvement in the preschool program and the degree to which the child participated in the program. In addition to augmenting the information provided by the Vineland-Classroom Edition, the

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Teacher Questionnaire permitted a comparison between parent and teacher perceptions of each child's involvement in the preschool program.

Procedure

All preschool and day care supervisors serving visually impaired children in Essex, Kent and Lambton Counties were contacted by letter (See Appendix B) requesting their participation in the study. Preschool and day care centre supervisors agreeing to participate were asked to identify children enrolled in their program meeting the criteria of visual impairment contained in the letter. Each program supervisor having one or more visually impaired child enrolled in their facility was asked to select a comparable number of sighted same-sexed peers in the same age group as the visually impaired children. Teachers were asked to choose the "most nearly average child(children) for their age group" among the sighted peers. The preschool supervisors were then asked to send letters (See Appendix C) of permission to the parents of the visually impaired and sighted comparison children enrolled in their program. Data collection began when parents informed the day care supervisor of their willingness to participate in the study. The first phase of the study involved behaviour observations.

Behaviour Observations. Eight of the nine preschool programs participating in the study were half day programs.

Behaviour observations were collected over a two day period for seven of the nine visually impaired-sighted children dyads. One dyad was observed for a full day and one dyad could only be observed for one observation period due to the summer closing of the preschool. The length of each observation period per dyad varied across each facility. This variability was due partly to different routines in each of the facilities visited, the needs of the individual children, and the participation of children with handicaps in rehabilitative or special programming during day-care hours. Observation periods ranged from a minimum of one hour per child to a maximum of three hours per child, with an average length of two hours per child.

The format for data collection was identical for all participants. Observations were collected as the children followed the day care routine. The observer remained within hearing distance of the target child, and interacted with her/him as little as possible. A second observer was present for approximately 60% of the behaviour observations.

The Behaviour Observation data were collected in an event sampling format with each interaction constituting an event. Observations were alternated across each visually impaired sighted child dyad. Each child was observed for a maximum of five minutes and the first interaction that occurred was recorded. An interaction was considered to have terminated if the initiator-recipient ceased to interact for

a 30 second period following an interaction. After an interaction had terminated, the observer(s) switched to the comparison child. This child was observed until an interaction was recorded or the five minute observation period expired. The observer(s) then switched back to the first child.

The social interactions of each target child were recorded according to the 8 categories of the Behaviour Observation Record. Interactions were recorded as either an initiation directed towards a recipient (child or teacher), or as a response to an initiation. The behaviour of the recipient was also recorded. Social initiations were defined as any attempt to engage a child or teacher in an interaction. Responses were defined as any action of the recipient that either continued or terminated the interaction sequence. Duration was recorded by counting the number of interchanges between initiator and recipient.

Scoring. Seven of the eight categories of the Behaviour Observation Record (excluding Duration) contained specific behaviour codes (e.g. Antecedent Condition contained "alone", "peer", "group", and "teacher"). Incidences of each category code were summed for each participant (visually impaired target, sighted target, other child or teacher). Because the number of interactions recorded for each target child was different, code frequencies were converted to proportions. The resulting proportions for each category

code then formed the basis of the statistical analysis.

Reliability. Reliability for each of the behaviour categories was assessed using two coders for approximately 60% of the behaviour observation sessions. Reliability coefficients were calculated by dividing the number of agreements by the number of disagreements plus the number of agreements. Cohen's Kappa was calculated to correct for agreements due to chance.

Parent and Teacher Interviews. The primary observer was responsible for conducting all teacher and parent interviews. Teacher and parent interviews occurred after the behaviour observations of each dyad. Teachers were asked to complete the Vineland-Classroom Edition and the Teacher Questionnaire which was administered in interview format. Teachers were asked to complete the Teacher Questionnaire for the visually impaired children only.

In the final phase of the study, the mother of each target child was interviewed with the Vineland-Survey Form and the Parent Questionnaire. The Vineland-Survey Form was administered according to the standardized procedure outlined in the manual (Sparrow, Balla, & Cicchetti, 1984).

Scoring. The Vineland Survey Form and Classroom Edition were scored according to the procedures outlined in the respective manuals (Sparrow et al, 1984). Questions on the Parent and Teacher Questionnaires were examined both quantitatively and qualitatively. Parent responses to six of

the Parent Questionnaire items and five Teacher Questionnaire items identical with questions on the Parent Questionnaire were rated on five-point Likert scales by the primary and reliability observer. This permitted a quantitative comparison of the visually impaired and sighted children's parent's perceptions of their child's involvement in the preschool program, as well as a comparison of the parents' and teachers' perceptions of the visually impaired children's development and involvement in the preschool programs. Parent and teacher responses were also examined qualitatively for similarities or general themes in their responses.

CHAPTER III

RESULTS

Frequency scores from the Behaviour Observation Record, Standard scores from the Survey Form and Classroom Edition of the Vineland Adaptive Behaviour Scale, and Parent and Teacher Questionnaire data were compared for the nine visually impaired and nine sighted comparison children participating in the study.

Behaviour Observation Record.

Behaviour observations were collected over a two day period for seven of the nine visually impaired-sighted dyads and over a one day period for two of the dyads. One dyad was observed across the morning and afternoon program, and one dyad was observed for one period only due to the summer closing of the preschool. Because observation data was available for the first observation period only for this dyad, participant's scores were compared for each observation period separately. In addition, all data available for each dyad were analyzed together in a separate category called Combined.

Reliability. Accuracy of the behaviour observations was assessed using a reliability coder for approximately 19

of the 32 hours of observation. Interrater agreement was evaluated for each of the eight categories of the Behaviour Observation Record and the reliability coefficients are presented in Table 3. The percentage agreement ranged from 70% (Duration Category) to 93% (Recipient Category), with an average percentage agreement of 82%. Cohen's Kappas were calculated to correct for agreements due to chance and ranged from .36 (Duration) to .97 (Initiator).

Antecedent Condition. The mean proportions, standard deviations, and t -test comparisons for the Antecedent Condition are presented in Table 4. On Observation Period 1, Observation Period 2, and Combined, the visually impaired children were observed to be within three feet of a preschool teacher significantly more often than were the sighted target children ($t=4.28$, $df=8$, $p<.003$; $t=3.66$, $df=7$, $p<.008$; and $t=4.26$, $df=8$, $p<.009$ respectively). Sighted target children were also observed to be within three feet of one or two peers on Observation Period 1 ($t=-2.49$, $df=8$, $p<.038$). Although not significant, a similar trend was observed on Combined ($p>.05$). No other significant differences were observed between the two groups of children for antecedent condition.

Initiator and Recipient. Each interaction involved an initiator and a recipient. Initiators and recipients could be a visually impaired target, sighted target, other sighted child or teacher. Table 5 indicates the mean proportions,

Table 3

Reliability Coefficients for the Behaviour ObservationRecord

Behaviour Observation Category	Reliability Coefficient (% Agreement)	Cohen's Kappa
Antecedent Condition	.85	.76**
Initiator	.90	.97**
Recipient	.93	.90**
Initiation-Nature	.79	.65**
Initiation-Type	.77	.67**
Response-Nature	.80	.73**
Response-Type	.85	.77**
Duration	.70	.36*

*p<.05

**p<.01

Table 4

Mean Proportions, Standard Deviations and t-test Comparisons
for Antecedent Condition Between the Visually Impaired and
Sighted Target Children

Antec. Cond.	Observation Period	VI	Target	S	t value	df	p
Teacher 1	M	.3274	.1231		4.28	8	.003**
	SD	.223	.138				
Teacher 2	M	.2438	.0885		3.66	7	.008**
	SD	.157	.094				
Teacher 1+2	M	.2766	.1071		4.26	8	.009**
	SD	.178	.099				
Peer 1	M	.0709	.2435		-2.49	8	.038*
	SD	.104	.213				
Peer 2	M	.0885	.1561		-0.71	7	.500*
	SD	.166	.226				
Peer 1+2	M	.0708	.1791		-2.12	8	.066
	SD	.121	.172				
Group 1	M	.4953	.5532		-0.62	8	.554
	SD	.203	.229				
Group 2	M	.5392	.6415		-1.44	7	.193
	SD	.279	.223				
Group 1+2	M	.5235	.6222		-2.25	8	.054
	SD	.222	.178				

Table 4 Continued

Alone	1	M	.1064	.0802	0.75	8	.473
		SD	.093	.080			
Alone	2	M	.1286	.1139	0.26	7	.804
		SD	.097	.133			
Alone	1+2	M	.1286	.0916	1.30	8	.229
		SD	.092	.077			

* $p < .05$ ** $p < .01$

Table 5

Mean Proportions, Standard Deviations and t-test Comparisons
for Initiations made by the Target Children, Teachers and
Other Sighted Peers

Initiator	Obser. Period	VI	Target S	t value	df	p
Target 1	M	.1973	.4739	-5.17	8	.001**
	SD	.165	.197			
Target 2	M	.2213	.4384	-5.26	7	.001**
	SD	.149	.177			
Target 1+2	M	.2133	.4784	-6.40	8	.001**
	SD	.149	.180			
Teacher 1	M	.7204	.4134	5.96	8	.001**
	SD	.216	.234			
Teacher 2	M	.6894	.4190	4.67	7	.002**
	SD	.231	.263			
Teacher 1+2	M	.6942	.4019	6.08	8	.001**
	SD	.210	.241			
Child 1	M	.0662	.1229	-1.83	8	.105
	SD	.041	.096			
Child 2	M	.0895	.1409	-2.23	7	.061
	SD	.090	.117			
Child 1+2	M	.0648	.1188	-2.06	8	.074
	SD	.063	.098			

**p<.01

standard deviations, and t -test comparisons for Initiations. The sighted target children made significantly more initiations towards others during interactions than did the visually impaired children. This observation was significant across Observation Period 1 ($t=-5.17$, $df=8$, $p<.001$), Observation Period 2 ($t=-5.26$, $df=7$, $p<.001$), and Combined ($t=-6.40$, $df=8$, $p<.001$). On Observation Period 1, Observation Period 2, and Combined, teachers made significantly more initiations towards the visually impaired than to the sighted children, ($t=5.96$, $df=8$, $p<.001$; $t=4.67$, $df=7$, $p<.002$; $t=6.08$, $df=8$, $p<.001$).

Table 6 presents the mean proportions, standard deviations, and t -test comparisons for initiations made by the target children toward teachers and other sighted peers. Teachers and other sighted peers were significantly more likely to be the recipient of a sighted target child initiation than a visually impaired target child initiation on Observation Period 1 and Combined ($t=-2.30$, $df=8$, $p<.05$; $t=-2.43$, $df=7$, $p<.041$ and $t=-3.68$, $df=8$, $p<.006$; $t=-3.12$, $df=8$, $p<.014$) In other words, the visually impaired children were less likely to be the recipient of a sighted target child initiation than were teachers or other sighted peers. No other differences were observed.

Nature and Type of Initiation and Response

Interactions. All initiations and responses were coded according to the nature (physical, gesture, verbal, or

Table 6

Mean Proportions, Standard Deviations and t-test Comparisons of Initiations made by the Target Children to Teachers and Other Sighted Peers

Recipient	Obser. Period	VI	Target S	t value	df	p
Teacher 1	M SD	.1270 .084	.2351 .110	-2.30	8	.050
Teacher 2	M SD	.1437 .086	.2437 .160	-2.06	7	.079
Teacher 1+2	M SD	.1385 .072	.2433 .126	-2.43	8	.041*
Sighted 1 Peer	M SD	.0718 .059	.2273 .151	-3.68	8	.006**
Sighted 2 Peer	M SD	.0845 .063	.1787 .199	-1.58	7	.165
Sighted 1+2 Peer	M SD	.0645 .066	.2126 .175	-3.12	8	.014*

*p<.05

**p<.01

combination) and type (positive, comply, question, etc.) of interaction. Due to the small number of interactions between the visually impaired or sighted target children and other sighted peers, seven and 18 percent respectively, the nature and type of initiations and responses made by other sighted peers was not considered for further analysis.

Initiation-Nature. The mean proportions, standard deviations, and t -test comparisons of the Nature of Initiations made by the visually impaired and sighted target children are presented in Table 7, and for teachers in Table 8, respectively. On Observation Period 1, the sighted children were significantly more likely to initiate an interaction using "Combination" (physical, gestural and verbal nature of initiations) than were the visually impaired children ($t=-3.14$, $df=8$, $p<.014$). However, the visually impaired children were observed to use more "Gestures" to initiate an interaction than were the sighted children on Combined ($t=2.75$, $df=8$, $p<.025$). No other significant differences were observed in the nature of initiations made by the visually impaired and sighted target children. In addition, no significant differences were observed in the nature of initiations made by teachers towards the visually impaired or sighted children.

Initiation-Type. The mean proportions, standard deviations, and t -test comparisons of the Type of Initiation made by the visually impaired and sighted target children

Table 7

Mean Proportions, Standard Deviations and t-test Comparisons
of the Nature of Initiations made by the Target Children

Nature	Observed Period	VI	Target S	t value	df	p
Physical 1	M SD	.0191 .045	.0432 .059	-1.43	8	.191
Physical 2	M SD	.0286 .076	.0237 .053	-0.13	7	.901
Physical 1+2	M SD	.0190 .050	.0486 .046	-1.33	8	.105
Gesture 1	M SD	.2995 .344	.1507 .140	1.42	8	.192
Gesture 2	M SD	.2687 .415	.1037 .104	1.22	7	.267
Gesture 1+2	M SD	.2921 .277	.1198 .092	2.75	8	.025*
Verbal 1	M SD	.5481 .408	.4726 .217	0.70	8	.502
Verbal 2	M SD	.4727 .342	.6791 .200	-1.54	7	.183
Verbal 1+2	M SD	.5047 .345	.5402 .164	-0.41	8	.696

Table 7 Continued

Combin- 1 ation	M	.1333	.3495	-3.14	8	.014*
	SD	.179	.113			
Combin- 2 ation	M	.2300	.1935	-0.39	7	.709
	SD	.200	.180			
Combin- 1+2 ation	M	.1843	.2914	-2.02	8	.078
	SD	.167	.130			

*p<.05

Table 8

Mean Proportions, Standard Deviations and t-test Comparisons
of the Nature of Initiations made by Teachers

Nature	Obser. Period		VI	Target s	t value	df	p																																																																																												
Physical 1	M		.0258	.0182	0.48	8	.641																																																																																												
	SD		.025	.039				Physical 2	M		.0093	.0000	1.47	7	.186	SD		.018	.000	Physical 1+2	M		.0195	.0105	0.91	8	.389	SD		.020	.024	Gesture 1	M		.0296	.0144	0.81	8	.443	SD		.044	.029	Gesture 2	M		.0160	.0000	1.28	7	.242	SD		.035	.000	Gesture 1+2	M		.0226	.0062	1.21	8	.262	SD		.036	.012	Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056
Physical 2	M		.0093	.0000	1.47	7	.186																																																																																												
	SD		.018	.000				Physical 1+2	M		.0195	.0105	0.91	8	.389	SD		.020	.024	Gesture 1	M		.0296	.0144	0.81	8	.443	SD		.044	.029	Gesture 2	M		.0160	.0000	1.28	7	.242	SD		.035	.000	Gesture 1+2	M		.0226	.0062	1.21	8	.262	SD		.036	.012	Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152								
Physical 1+2	M		.0195	.0105	0.91	8	.389																																																																																												
	SD		.020	.024				Gesture 1	M		.0296	.0144	0.81	8	.443	SD		.044	.029	Gesture 2	M		.0160	.0000	1.28	7	.242	SD		.035	.000	Gesture 1+2	M		.0226	.0062	1.21	8	.262	SD		.036	.012	Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																				
Gesture 1	M		.0296	.0144	0.81	8	.443																																																																																												
	SD		.044	.029				Gesture 2	M		.0160	.0000	1.28	7	.242	SD		.035	.000	Gesture 1+2	M		.0226	.0062	1.21	8	.262	SD		.036	.012	Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																																
Gesture 2	M		.0160	.0000	1.28	7	.242																																																																																												
	SD		.035	.000				Gesture 1+2	M		.0226	.0062	1.21	8	.262	SD		.036	.012	Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																																												
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	SD		.036	.012				Verbal 1	M		.5876	.7454	-1.74	8	.120	SD		.219	.244	Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																																																								
Verbal 1	M		.5876	.7454	-1.74	8	.120																																																																																												
	SD		.219	.244				Verbal 2	M		.5882	.6705	-1.08	7	.317	SD		.224	.211	Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																																																																				
Verbal 2	M		.5882	.6705	-1.08	7	.317																																																																																												
	SD		.224	.211				Verbal 1+2	M		.5950	.7326	-2.23	8	.056	SD		.205	.152																																																																																
Verbal 1+2	M		.5950	.7326	-2.23	8	.056																																																																																												
	SD		.205	.152																																																																																															

Table 8 Continued

Combination	1	M	.3570	.2220	1.34	8	.216
		SD	.190	.260			
Combination	2	M	.3865	.3295	0.83	7	.433
		SD	.204	.211			
Combination	1+2	M	.3629	.2507	1.83	8	.104
		SD	.180	.153			

are presented in Table 9, and for teachers in Table 10, respectively. The sighted target children were observed to make significantly more "Requests" than the visually impaired children. This difference was observed on Observation Period 2 ($t=-4.44$, $df=7$, $p<.005$) and Combined ($t=-3.00$, $df=8$, $p<.017$). No other significant differences were observed.

No significant differences were observed in the type of initiations made by teachers towards the visually impaired or sighted children. This observation indicates that the teachers in this study do not interact in a differential manner with the visually impaired or sighted target children.

Response-Nature. The mean proportions, standard deviations, and t -test comparisons of the Nature of Responses made by the visually impaired and sighted children are presented in Table 11, and for teachers in Table 12, respectively. The sighted children made significantly more "Verbal" responses to initiations than did the visually impaired children on Observation Period 1 ($t=-2.62$, $df=8$, $p<.031$), Observation Period 2 ($t=-5.09$, $df=7$, $p<.001$) and Combined ($t=-4.84$, $df=8$, $p<.001$). On Observation Period 2, the sighted children were also significantly more likely to respond to an initiation using "Combination" (physical, gesture or verbal nature) than were the visually impaired children ($t=-3.49$, $df=7$, $p<.01$). The visually impaired

Table 9

Mean Proportions, Standard Deviations and t-test Comparisons
of the Type of Initiations made by the Target Children

Type	Obser. Period	Target VI	S	t value	df	p
Request 1	M .2463 SD .330	.1432 .128		0.82	8	.438
Request 2	M .0260 SD .069	.3335 .169		-4.44	7	.005**
Request 1+2	M .0950 SD .083	.2115 .113		-3.00	8	.017*
Question 1	M .1301 SD .159	.0388 .045		1.57	8	.156
Question 2	M .1096 SD .196	.1079 .084		0.02	7	.983
Question 1+2	M .1145 SD .166	.0616 .049		0.91	8	.387
Command 1	M .0159 SD .048	.0093 .019		0.58	8	.577
Command 2	M .0065 SD .017	.0246 .051		-1.38	7	.218
Command 1+2	M .0182 SD .047	.0307 .037		-0.73	8	.487
Positive 1	M .4616 SD .316	.7430 .175		-1.94	8	.088
Positive 2	M .7772 SD .202	.4797 .186		2.16	7	.074
Positive 1+2	M .5849 SD .249	.5985 .129		-0.16	8	.875

Table 9 Continued

Agonist 1	M	.0307	.0657	-1.74	8	.126
	SD	.061	.109			
Agonist 2	M	.0303	.0339	-0.08	7	.935
	SD	.062	.080			
Agonist 1+2	M	.0432	.0826	-1.36	8	.211
	SD	.061	.100			
Other 1	M	.1154	.0000	1.04	8	.328
	SD	.332	.000			
Other 2	M	.0540	.0204	0.77	7	.472
	SD	.073	.054			
Other 1+2	M	.1442	.0101	1.21	8	.259
	SD	.325	.030			

*p<.05

**p<.01

Table 10

Mean Proportions, Standard Deviations and t-test Comparisons
of the Type of Initiations made by Teachers

Type	Obser. Period	VI	Target s	t value	df	p
Request 1	M	.3484	.3886	-0.53	8	.609
	SD	.173	.164			
Request 2	M	.3856	.4482	-0.86	7	.418
	SD	.183	.242			
Request 1+2	M	.3738	.4141	-0.65	8	.536
	SD	.157	.142			
Question 1	M	.2940	.2776	0.24	8	.817
	SD	.131	.158			
Question 2	M	.2298	.1872	0.80	7	.452
	SD	.130	.146			
Question 1+2	M	.1953	.2562	-1.38	8	.206
	SD	.160	.141			
Command 1	M	.0392	.0573	-0.40	8	.702
	SD	.080	.087			
Command 2	M	.0181	.0060	0.81	7	.446
	SD	.041	.017			
Command 1+2	M	.1040	.0451	1.09	8	.307
	SD	.137	.081			
Positive 1	M	.3185	.2765	0.74	8	.478
	SD	.189	.192			
Positive 2	M	.3665	.3586	0.06	7	.950
	SD	.197	.303			
Positive 1+2	M	.3269	.2846	0.55	8	.595
	SD	.187	.195			

Table 10 Continued

Agonist 1	M	.0000	.0000
	SD	.000	.000
Agonist 2	M	.0000	.0000
	SD	.000	.000
Agonist 1+2	M	.0000	.0000
	SD	.000	.000
Other 1	M	.0000	.0000
	SD	.000	.000
Other 2	M	.0000	.0000
	SD	.000	.000
Other 1+2	M	.0000	.0000
	SD	.000	.000

Table 11

Mean Proportions, Standard Deviations and t-test Comparisons
of the Nature of Responses made by the Target Children

Nature	Observ. Period		Target		t value	df	p
			VI	S			
No Response 1	1	M	.1953	.1330	1.11	8	.300
		SD	.159	.091			
No Response 2	2	M	.2282	.1140	2.15	7	.069
		SD	.100	.105			
No Response 1+2	1+2	M	.2239	.1240	2.15	8	.063
		SD	.119	.080			
Physical 1	1	M	.0840	.0681	0.40	8	.697
		SD	.174	.076			
Physical 2	2	M	.0963	.0553	0.84	7	.430
		SD	.198	.083			
Physical 1+2	1+2	M	.0833	.0618	0.52	8	.616
		SD	.179	.071			
Gesture 1	1	M	.4763	.3775	1.61	8	.145
		SD	.230	.192			
Gesture 2	2	M	.4748	.2869	2.81	7	.026*
		SD	.258	.169			
Gesture 1+2	1+2	M	.4827	.3372	2.88	8	.020*
		SD	.240	.146			

Table 11 Continued

Verbal	1	M	.1359	.3080	-2.62	8	.031*
		SD	.198	.109			
Verbal	2	M	.1071	.3705	-5.09	7	.001**
		SD	.132	.196			
Verbal	1+2	M	.1143	.3335	-4.84	8	.001**
		SD	.156	.128			
Combination 1		M	.0947	.1133	-0.36	8	.725
		SD	.085	.094			
Combination 2		M	.0823	.1734	-3.49	7	.010**
		SD	.061	.088			
Combination 1+2		M	.0956	.1436	-1.70	8	.128
		SD	.065	.058			

*p<.05

**p<.01

Table 12

Mean Proportions, Standard Deviations and t-test Comparisons
of the Nature of Responses made by Teachers

Nature	Obser. Period		VI	Target s	t value	df	p
No Response	1	M	.1458	.1322	0.18	8	.862
		SD	.193	.111			
No response	2	M	.2124	.3401	-1.24	7	.263
		SD	.227	.159			
No Response	1+2	M	.1688	.2182	-1.21	8	.266
		SD	.155	.099			
Physical	1	M	.0000	.0185	-1.00	8	.347
		SD	.000	.056			
Physical	2	M	.0000	.0000			
		SD	.000	.000			
Physical	1+2	M	.0000	.0185	-1.00	8	.347
		SD	.000	.056			
Gesture	1	M	.0694	.2308	-1.64	8	.139
		SD	.167	.227			
Gesture	2	M	.0429	.0281	1.14	7	.299
		SD	.244	.050			
Gesture	1+2	M	.0639	.1368	-1.67	8	.133
		SD	.101	.093			

Table 12 Continued

Verbal	1	M	.5536	.4374	0.79	8	.450
		SD	.363	.140			
Verbal	2	M	.4969	.5247	-0.26	7	.803
		SD	.312	.238			
Verbal	1+2	M	.5187	.4905	0.33	8	.751
		SD	.245	.157			
Combination	1	M	.2312	.1810	0.36	8	.728
		SD	.330	.222			
Combination	2	M	.1461	.1071	0.43	7	.682
		SD	.071	.142			
Combination	1+2	M	.2487	.1360	0.96	8	.363
		SD	.295	.112			

children were significantly more likely to respond to an initiation using "Gestures" than were the sighted children on Observation Period 2 ($t=2.81$, $df=7$, $p<.026$) and Combined ($t=2.88$, $df=8$, $p<.02$). No other significant differences were observed in the nature of the responses made by the visually impaired and sighted target children. In addition, no significant differences were noted in the nature of teacher responses to target child initiations.

Response-Type. The mean proportions, standard deviations, and t -test comparisons of the Type of Responses made by the visually impaired and sighted target children are presented in Table 12, and for teachers in Table 13. The sighted children were observed to make significantly more "Help" responses than the visually impaired children on Observation Period 1 ($t=-2.83$, $df=8$, $p<.022$), and Combined ($t=-2.82$, $df=8$, $p<.023$). No other differences were observed between the visually impaired and sighted target children for type of response.

On Observation Period 1, teachers were observed to respond positively to initiations made by the sighted children significantly more often than to initiations made by the visually impaired children ($t=-4.18$, $df=8$, $p<.003$). No other differences were observed.

Duration. The mean proportions, standard deviations, and t -test comparisons for the length of interactions between the target children and teachers and the target

Table 13

Mean Proportions, Standard Deviations and t-test Comparisons
of the Type of Responses made by the Target Children

Response Type	Obser. Period	VI	Target S	t value	df	p
No Response	1 M	.1953	.1330	1.11	8	.300
	SD	.159	.091			
No Response	2 M	.2282	.1140	2.15	7	.069
	SD	.100	.105			
No Response	1+2 M	.2239	.1240	2.15	8	.063
	SD	.115	.080			
Help	1 M	.0046	.0539	-2.83	8	.022*
	SD	.014	.058			
Help	2 M	.0043	.0060	-1.00	7	.351
	SD	.012	.017			
Help	1+2 M	.0042	.0342	-2.82	8	.023*
	SD	.013	.038			
Comply	1 M	.1791	.2117	-0.77	8	.465
	SD	.144	.106			
Comply	2 M	.2459	.2204	0.38	7	.714
	SD	.173	.140			
Comply	1+2 M	.2132	.2145	-0.03	8	.979
	SD	.150	.092			
Command	1 M	.0000	.0000			
	SD	.000	.000			
Command	2 M	.0000	.0000			
	SD	.000	.000			
Command	1+2 M	.0000	.0000			
	SD	.000	.000			

Table 13 Continued

Positive	1	M	.5602	.5014	0.70	8	.506
		SD	.241	.105			
Positive	2	M	.4905	.6119	-1.35	7	.220
		SD	.246	.106			
Positive	1+2	M	.5146	.5523	-0.52	8	.619
		SD	.229	.081			
Agonist	1	M	.0046	.0641	-1.42	8	.192
		SD	.014	.125			
Agonist	2	M	.0068	.0069	-0.02	7	.986
		SD	.013	.020			
Agonist	1+2	M	.0075	.0328	-1.39	8	.201
		SD	.014	.055			
Other	1	M	.0167	.0267	-0.75	8	.477
		SD	.033	.034			
Other	2	M	.0196	.0000	1.46	7	.188
		SD	.038	.000			
Other	1+2	M	.0182	.0181	0.01	8	.990
		SD	.028	.026			

*p<.05

Table 14

Mean Proportions, Standard Deviations and t-test Comparisons
of the Type of Responses made by Teachers

Response Type	Obser. Period		Target VI	S	t value	df	p
No Response	1	M	.1458	.1322	0.18	8	.862
		SD	.193	.111			
No Response	2	M	.2142	.3401	-1.24	7	.263
		SD	.227	.159			
No Response	1+2	M	.1688	.2182	-1.20	8	.266
		SD	.155	.099			
Help	1	M	.2024	.0217	1.50	8	.172
		SD	.357	.049			
Help	2	M	.0330	.0000	1.00	7	.356
		SD	.033	.000			
Help	1+2	M	.1778	.0188	1.42	8	.194
		SD	.336	.047			
Comply	1	M	.1270	.0000	2.15	8	.063
		SD	.177	.00			
Comply	2	M	.0000	.0975	-2.26	7	.064
		SD	.000	.111			
Comply	1+2	M	.0796	.0315	1.36	8	.210
		SD	.111	.045			
Command	1	M	.0000	.0058	-1.00	8	.347
		SD	.000	.018			
Command	2	M	.0000	.0000			
		SD	.000	.000			
Command	1+2	M	.0000	.0029	-1.00	8	.347
		SD	.000	.009			

Table 14 Continued

Positive	1	M	.4137	.8403	-4.18	8	.003**
		SD	.272	.142			
Positive	2	M	.7529	.5380	1.80	7	.123
		SD	.234	.170			
Positive	1+2	M	.5599	.7115	-1.57	8	.154
		SD	.252	.101			
Agonist	1	M	.0000	.0000			
		SD	.000	.000			
Agonist	2	M	.0000	.0000			
		SD	.000	.000			
Agonist	1+2	M	.0000	.0000			
		SD	.000	.000			
Other	1	M	.1111	.0000	1.00	8	.347
		SD	.333	.000			
Other	2	M	.0000	.0238	-1.00	7	.356
		SD	.000	.059			
Other	1+2	M	.0139	.0170	-0.15	8	.881
		SD	.042	.036			

**p<.01

children and other sighted peers are presented in Tables 15 and 16 respectively. On Observation Period 1 and Combined, the sighted children were observed to engage in interactions with other sighted children for a duration longer than three turns significantly more often than the visually impaired children ($t=-2.55$, $df=8$, $p<.035$; $t=-2.94$, $df=8$, $p<.021$). No other differences were observed for length of interactions.

Vineland

Means, standard deviations, and t -test comparisons of the visually impaired and sighted target child evaluations on the Vineland Survey Edition, (Parent Report), are presented in Table 17. The visually impaired children were rated significantly lower ($t=-5.09$, $df=8$, $p<.001$) on the Adaptive Behaviour Composite and the four Domain scores comprising the Adaptive Behaviour Composite than were the sighted target children.

Table 18 presents the means, standard deviations, and t -test comparisons for the visually impaired and sighted target children obtained from their teachers on the Vineland Classroom Edition. Teachers also rated the visually impaired children as significantly lower on the Adaptive Behaviour Composite, ($t=-3.37$, $df=8$, $p<.01$) and Communication, Daily Living Skills, Socialization and Motor Development domains of the Vineland.

Tables 19 and 20 present the means, standard deviations, and t -test comparisons between parent and

Table 15

Mean Proportions, Standard Deviations and t-test Comparisons
for the Duration of Interactions Between Target Children and
Teachers

Observ. Period	Duration		Target VI	S	t value	df	p
1	1	M	.7432	.7998	-0.88	8	.414
		SD	.176	.147			
	2	M	.1197	.1223	-0.06	8	.897
SD		.109	.077				
	>3	M	.1471	.0778	1.44	8	.372
		SD	.095	.091			
2	1	M	.7431	.8119	-2.41	7	.037*
		SD	.145	.157			
	2	M	.1782	.1683	0.19	7	.809
SD		.120	.141				
	>3	M	.0787	.0198	1.75	7	.116
		SD	.089	.044			
Combined	1	M	.7408	.8033	-1.12	8	.295
		SD	.154	.141			
	2	M	.1442	.1403	-0.17	8	.862
SD		.105	.097				
	>3	M	.1150	.0564	1.43	8	.215
		SD	.083	.072			

*p<.05

Table 16

Mean Proportions, Standard Deviations and t-test Comparisons
for the Duration of Interactions Between Target Children and
Other Sighted Peers

Observ. Period	Duration		Target VI	S	t value	df	p
1	1	M	.8319	.6899	-0.34	8	.751
		SD	.1932	.171			
	2	M	.1149	.1319	-0.59	8	.493
SD		.144	.159				
2	>3	M	.0388	.1780	-2.55	8	.035*
		SD	.076	.166			
	1	M	.8445	.7119	0.05	7	.983
SD		.176	.242				
2	2	M	.1291	.1487	-0.51	7	.629
		SD	.147	.174			
	>3	M	.0263	.1393	-1.92	7	.127
SD		.065	.145				
Combined	1	M	.8686	.6787	-2.65	8	.03*
		SD	.167	.167			
	2	M	.1011	.1684	-1.00	8	.347
SD		.129	.161				
>3	M	.0302	.1528	-2.94	8	.021*	
	SD	.058	.114				

*p<.05

Table 17

Means, Standard Deviations and T-test Comparisons of the
Target Child Evaluations on the Vineland Adaptive Behaviour
Scales-Survey Edition (Parent Report)

Vineland Scales		Target		t-test	df	p
		VI	S			
Adaptive Beh. Composite	M	57.11	80.22	-5.09	8	.001**
	SD	17.05	13.86			
Communication	M	69.56	88.78	-2.74	8	.026*
	SD	18.50	14.40			
Daily Living Skills	M	58.00	81.56	-5.59	8	.001**
	SD	15.04	12.97			
Socialization	M	67.44	90.56	-3.80	8	.005**
	SD	15.83	14.26			
Motor Skills	M	45.22	76.89	-5.83	8	.001*
	SD	19.85	23.10			

*p<.05

**p<.01

Table 18

Means, Standard Deviations and T-test Comparisons of the
Target Child Evaluations on the Vineland Adaptive Behaviour
Scales-Classroom Edition (Teacher Report)

Vineland Scales		Target		t value	df	p
		VI	S			
Adaptive Beh. Composite	M	66.89	85.11	-3.37	8	.01*
	SD	10.15	18.60			
Communication	M	70.44	88.00	-4.26	8	.003*
	SD	9.54	18.49			
Daily Living Skills	M	67.56	82.22	-3.42	8	.009**
	SD	8.35	11.29			
Socialization	M	72.44	86.44	-2.50	8	.037*
	SD	9.61	17.30			
Motor Skills	M	65.22	90.67	-3.16	8	.013*
	SD	16.75	25.89			

*p<.05

**p<.01

teacher evaluations of the visually impaired and sighted target children on the Vineland respectively. Parents and teachers differed in their assessment of the visually impaired children on the Adaptive Behaviour Composite ($t = -3.70$, $df = 8$, $p < .006$), with teachers rating the visually impaired target children more favorably than their parents. Parents and teachers also differed significantly in their assessment of the visually impaired children's Daily Living Skills ($t = -3.53$, $df = 8$, $p < .008$) and Motor Development scores ($t = -8.73$, $df = 8$, $p < .001$), with teachers again rating the visually impaired children more favorably. However, parents and teachers did not differ ($p > .05$) in their assessment of the visually impaired children's Communication or Socialization Skills.

Parents and teachers did not differ in their assessment of the sighted target children's Adaptive Behaviour Composite score, Communication, Daily Living Skills or Socialization domain scores. However, teachers assigned a significantly higher Motor Skills rating to the sighted children ($t = -2.47$, $df = 8$, $p < .025$) than did their parents.

Parent and Teacher Questionnaire

Table 21 presents the means, standard deviations, and t -test comparisons of the target child evaluations on the Parent Questionnaire for questions scored with a Likert Scale (questions 2, 4, 5, 6, 10 and 11). The parents of the visually impaired children felt that their children

Table 19

Means, Standard Deviations and T-test Comparisons of the
Visually Impaired Children Between Parent and Teacher
Evaluations on the Vineland Adaptive Behaviour Scales

Vineland Scales	Evaluator		t-test	df	p	
	Parent	Teacher				
Adaptive Beh. Composite	M	57.11	66.89	-3.70	8	.006**
	SD	17.05	10.15			
Communication	M	69.56	70.44	-0.23	8	.823
	SD	18.50	9.54			
Daily Living Skills	M	58.00	67.56	-3.53	8	.008**
	SD	15.04	8.35			
Socialization	M	67.44	72.44	-1.31	8	.226
	SD	15.83	9.61			
Motor Skills	M	45.22	65.22	-8.73	8	.001**
	SD	19.85	16.75			

**p<.01

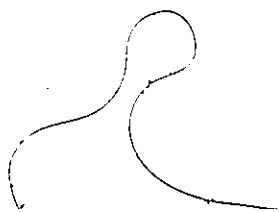


Table 20

Means, Standard Deviations and T-test Comparisons of the Sighted Target Children Between Parent and Teacher Evaluations on the Vineland Adaptive Behaviour Scales

Vineland Scales	Evaluator		t-test	df	p
	Parent	Teacher			
Adaptive Beh. Composite	M 80.22 SD 13.86	85.11 18.60	-1.08	8	.310
Communication	M 88.78 SD 14.40	88.00 18.49	0.15	8	.886
Daily Living Skills	M 81.56 SD 12.97	82.22 11.29	-0.18	8	.858
Socialization	M 90.56 SD 14.27	86.44 17.30	0.71	8	.495
Motor Skills	M 76.89 SD 23.10	90.67 25.89	-2.47	8	.025*

*p<.05

were less involved in the preschool program than did the parents of sighted children ($t=3.5$, $df=16$, $p<.003$).

Teachers completed the Teacher Questionnaire for the visually impaired children only. Identical questions appearing on both the Parent and Teacher Questionnaires and scored with a Likert Scale were compared. The means, standard deviations and t -test comparisons for questions (4/4, 5/5, 6/6, 10/7, and 11/11) are presented in Table 22. No differences were observed between the parents and teachers evaluations of the visually impaired child's experiences in the preschool program.

Thematic Content of Responses to the Questionnaire.

Parent and teacher responses to the questionnaires were also examined for similarities and differences in content. Generally, parents of sighted and visually impaired children provided similar responses to the questions, as did the six teachers interviewed with the Teacher Questionnaire.

Both groups of parents indicated they had enrolled their children in preschool programs to provide them with socialization and play experiences. Parents also felt that the preschool program had provided their child with the opportunity to learn basic skills as a preparatory step before kindergarten. In addition, both groups of parents with children enrolled in rehabilitative preschool programs appreciated the physiotherapy, occupational and speech therapy available through their child's program.

Table 21

Means, Standard Deviations and T-test Comparisons of the
Target Child Evaluations on the Parent Questionnaire

Question		VI	S	t-test	df	p
2	M	1.00	1.33	-2.00	16	.063
	SD	0.00	0.50			
4	M	1.22	2.00	-2.13	16	.056
	SD	0.44	1.00			
5	M	1.11	1.33	-1.11	16	.284
	SD	0.33	0.50			
6	M	2.00	1.22	3.50	16	.003**
	SD	0.50	0.44			
10	M	1.89	1.89	0.00	16	1.00
	SD	.782	.333			
11	M	2.22	2.22	0.00	16	1.00
	SD	.833	1.20			

*p<.01

Table 22

Means, Standard Deviations and T-test Comparisons of the
Visually Impaired Children Between Parent and Teacher
Evaluations of Identical Questions on the Parent and Teacher
Questionnaire

Question	Evaluator		t-test	df	p
	Parent	Teacher			
4	M	1.22	-1.51	8	.169
	SD	1.89			
5	M	1.11	-1.00	8	.347
	SD	1.33			
6	M	2.00	-1.00	8	.729
	SD	1.89			
10/7	M	1.89	-0.36	8	.729
	SD	2.00			
11	M	2.22	0.22	8	.834
	SD	2.11			

Both groups of parents agreed that their experiences with their child's preschool program had been a very satisfactory and rewarding one. Parents liked the variety of activities available, the structure or routine of the preschool program, and the staff, who were described as caring, supportive, informative and encouraging. Parents of the visually impaired children also reported that they appreciated the suggestions and feedback they received about their child from the preschool staff. None of the parents interviewed reported negative experiences with their child's preschool program, other than one parent who was concerned with the limited amount of information available for teachers of visually impaired children.

All parents were pleased with the progress their child was making in their preschool program. However, parents of visually impaired children differed in their assessment of their child's level of involvement in the preschool program. For example, all parents of sighted children and four parents of visually impaired children felt their child was actively involved in the preschool program. However, three parents of visually impaired children felt their child was not actively involved, but was as involved as they could be due to their handicapping conditions and two parents felt their child was not as involved as they would like to see.

All parents were pleased with their children's anticipated next placement. Most of the sighted children will either

continue with their present preschool placement or begin kindergarten. Similarly, the visually impaired children will either continue with their current preschool placement or will enter kindergarten or Grade school either in specialized placements (e.g., Ross MacDonald House) or in the regular school system.

Six parents of sighted children and three parents of visually impaired children reported that the community was meeting their needs^{*} as well as their child's needs. Three parents who had sighted children with special needs suggested increased access to transportation to and from services, more frequent contact with medical personnel, and guidelines for in-home therapy techniques. Six parents of visually impaired children reported they would like to see more resources and information about visual impairments and increased funding for equipment. In addition, three parents said they would like to have better access to services, such as shorter waiting lists, and resource or medical personnel located within Essex, Lambton and Kent Counties. Three parents also suggested parent support groups would be beneficial.

All parents felt that other children in the preschool program responded well to their child. Approximately half the parents of visually impaired and sighted children felt that they were welcomed by the other parents, while the remaining parents felt they did not know, or did not have

much contact with the other parents using the preschool program.

When asked whether visually impaired children should be enrolled with other visually impaired children, or placed in a more regular preschool environment, five parents of sighted children felt mainstreaming or integration was an appropriate placement. Three of these parents also added that visually impaired children would probably be integrated into society eventually, and that early integration would be more appropriate. Five parents of sighted children felt that both sighted and visually impaired children would benefit from involvement with each other. Five parents of visually impaired children also echoed this sentiment, and five parents of visually impaired children felt that involvement in the regular school system should occur as soon as possible. This response was qualified however, by three parents who felt that each child should be individually assessed and their placement determined by the child's needs. Two parents of visually impaired children felt that a segregated placement teaching basic skills, followed by an integrated placement, could also be a beneficial alternative.

Overall, the parents of visually impaired and sighted children did not differ in their responses to the questionnaire items. Both groups of parents reported positive experiences with their child's preschool program,

the preschool staff and the other parents and children using the facility. In addition, both groups expressed similar opinions regarding the integration of visually impaired children in regular preschool programs, reporting that sighted and visually impaired children would both benefit from the experience.

Six teachers most involved with the nine visually impaired children provided responses to the Teacher Questionnaire. All six teachers responded that having one or more visually impaired children enrolled in their program was a positive and challenging experience. Two teachers commented that they perceived the needs of the visually impaired children as no different than the needs of the other children. However, two other teachers expressed some concern that at times they found the needs of the visually impaired children overwhelming, and somewhat frightening because of the limited amount of curriculum information available.

All six teachers reported that having a visually impaired child enrolled in their program required additional program planning. However, none of them responded that the experience was so difficult as to be impossible or unproductive. Rather, the teachers expressed the feeling that teamwork among staff, and innovative and creative ways of presenting materials had helped to involve the visually impaired children in the preschool programs.

Although eight of the nine visually impaired children had some form of specialized programming in place, the focus of the programming was on teaching basic skills such as tactile exploration or seriation. In addition, approximately half the children received rehabilitative services such as physiotherapy, occupational and speech and language therapy. None of the preschools visited had implemented specific programs to encourage peer interactions between the visually impaired and sighted children.

All teachers expressed satisfaction with the gains made by the visually impaired children since their enrollment in the preschool programs. In addition, the six teachers reported that all of the visually impaired children were actively involved in the preschool program.

Teachers reported that the other children and their parents using the preschool responded positively to the presence of the visually impaired children. Two teachers reported that the other sighted children tended to be protective of the visually impaired children and to keep an eye open for any difficulties that might arise. One teacher commented that the parents of the sighted children liked the developing sensitivity of their children towards the needs of the visually impaired children.

Four teachers expressed the need for resource and support services for teachers of the visually impaired. For example, teachers reported that additional information on

visual impairments, new materials, and innovative ways to teach and restructure the preschool environment would be of benefit. In addition, teachers expressed a need for support and guidance in their work. Three teachers also mentioned the need for parent support groups to provide information and support to parents of visually impaired children.

Finally, four of the six teachers felt that placement in a regular preschool setting was appropriate for visually impaired children, however these teachers qualified their responses by adding that additional resources and support services would be necessary to facilitate the development of the visually impaired children. The remaining two teachers felt that placement in a regular preschool should be contingent upon whether or not such a placement was in the child's best interests. Three teachers responded that it was important for visually impaired children to be involved with sighted children, and two responded that eventually most children would be integrated into society so that experiences at the preschool level would be beneficial.

In conclusion, all teachers reported that having a visually impaired child enrolled in their preschool program was a positive and rewarding experience. Although some difficulties were reported, these were considered minor. Overall, teachers were pleased with the progress of the visually impaired children and reported that visually impaired children would benefit from integration within a

regular school system.

Clinical Impressions of the Visually Impaired Children

The nine visually impaired children varied considerably in their level of involvement with the preschool environment. This variability was due in part to the differing amounts of sight each child had, their physical mobility, and their overall disposition or personality. In general, these children did not appear to be actively involved in the preschool environment, however, these children seemed to respond very positively when an adult initiated contact with them. Most of the visually impaired children smiled, oriented themselves towards, and listened to the teacher, and seemed to become much more aware of their environment during teacher interactions. Also, once an interaction had been initiated by a teacher, these children attempted to participate in the ongoing activity, but often did not maintain a level of involvement once the teacher interaction had terminated. These children seemed to enjoy being interacted with, and responded with smiles, chuckles, gestures and verbalizations which appeared to be reinforcing to the teachers who interacted with them.

The physical limitations of some of the visually impaired children with additional handicaps did affect their ability to become, actively involved in the preschool environment. However, even the children who were only visually impaired did not appear to demonstrate levels of

involvement much greater than the visually impaired children with other handicaps. Although the visually impaired children without other handicaps were mobile and familiar with their preschool environment, their contact with other children was limited.

During free play, the visually impaired children frequently played by themselves, even though they were near other sighted children. The types of play behaviours demonstrated by the visually impaired children were often explorative and repetitive. For example, one child repeatedly opened and closed a doll house door, another explored the dimensions and surface of several large wooden blocks, or repeatedly squeezed a ball of play dough. Only two children (both with some vision) were observed to demonstrate purposeful play such as hammering a nail into a block of wood, or playing house alone.

Two of the nine children also made several attempts to join ongoing play activities with other children but these attempts were often ignored. One child, because of his larger size and loud voice tended to frighten some of the smaller girls in the preschool, although these girls seemed more willing to interact with the child than did the other children. However, this child's play was often counter to the girls' play because he was unaware of the rules guiding the play episode. Teachers often encouraged other sighted children to play with the second child and this request was

complied with reluctantly. The visually impaired child would often be engaged in parallel but not co-operative play with these children.

Only one child was observed to use mannerisms on a regular basis, although two other children demonstrated one or two incidents of a mannerism. The child with the regularly occurring mannerism was often avoided by the other children and much teacher contact was directed at stopping this behaviour.

CHAPTER IV

DISCUSSION

In the present study, visually impaired and sighted children in preschool settings were observed with particular attention given to their social interactions. Quantitative and qualitative differences in the social behaviours of these children were evaluated using a Behaviour Observation Record, the Vineland Adaptive Behaviour Scales and a Parent and Teacher Questionnaire. Overall, the visually impaired children were observed to be less involved in the preschool environment than were the sighted target children. For example, the visually impaired children were observed to be near a preschool teacher more often than the sighted target children. White (1980) also observed that her sample of handicapped children (her sample did not include visually impaired children) spent more time in the vicinity of a teacher than another child. Generally, the preschool teachers seemed to be very aware of the location of the visually impaired children in the classroom and tried to maintain frequent contact with them.

The visually impaired children were observed to make fewer initiations towards others, and were more likely to be

the recipient of a teacher initiation than were the sighted target children. Teacher initiations often served to engage the visually impaired child or to keep her/him involved in the ongoing preschool activities. For example, the teacher would sit or stand behind a visually impaired child and help her/him clap or dance during circle time. Also, as some of the visually impaired children were physically handicapped, teachers spent considerable time interacting with the children as they moved them from activity to activity and assisted them during snack time.

Sighted target children were observed to make more initiations than the visually impaired children. Sighted target child initiations were also relatively equally divided between teachers and other sighted peers while most initiations made by a visually impaired child were directed towards their teachers.

In general the visually impaired and sighted target children initiated or responded to interactions using a variety of means of communication. For example, although differences were observed, both groups of children used physical, gestural, verbal and combinations of these when interacting with others. However, sighted children were more likely to initiate or respond to interactions using a combination of response or verbal response styles while the visually impaired children were more likely to use gestures.

Similarly, the visually impaired and sighted target

children initiated or responded to interactions using a variety of types of communication (help, comply, positive overture). Sighted children were more likely to use requests to initiate an interaction, or to respond to an initiation by helping the initiator than were the visually impaired children. The Behaviour Observation data indicate that while the visually impaired children possess a variety of means of communicating with others, they are less likely to initiate interactions with others.

Overall, teachers did not differ in the nature or type of their initiations or responses to the visually impaired or sighted target children. This indicates that the teachers did not adopt a differential strategy for interacting with either group of children and suggests that teachers made the same demands of the visually impaired as they did of the target sighted children. This finding reflects positively on the potential for the successful involvement of visually impaired children in preschool settings. In other words, it suggests that positive and varied interactions are possible between visually impaired children and their preschool teachers.

The behaviour observation data indicate that the visually impaired children were not as involved in the preschool program as the sighted children. Differences existed both quantitatively and qualitatively in the social behaviours of the two groups of children. These findings

call into question, at least for visually impaired children, two assumptions (Guralnick, 1976), associated with integration. The first is the assumption that there are potential benefits afforded to handicapped children from observing and interacting with nonhandicapped peers. The level of involvement between the visually impaired and sighted children in this study was very low, consequently, the benefits of integration did not appear to be fully realized by the visually impaired children in the preschools visited. This is, however, consistent with the findings of other studies which indicate that proximity to nonhandicapped children does not guarantee interaction or involvement. For example, Devoney et al (1974) observed that handicapped children (their sample did not include visually impaired children) did not imitate the play behaviours of nonhandicapped children in unstructured settings. However, when cooperative play activities were designed and implemented by teachers improvements were noted in the level of imitation by the handicapped children. Cooke, Apolloni and Cooke (1976) also observed similar patterns and indicate that emphasis should be shifted from a reliance on proximity integration to carefully planned and implemented programs. The implementation of such programs was not evident in the preschool settings surveyed in this study.

The importance of curriculum planning for social skills development in the integration of visually impaired children

is reinforced by the study reported by Taylor-Hershel and Webster (1983). They reported that interactions were occurring between the visually impaired and sighted children within two months of integration, and that by four months these interactions could be characterized as regular and positive. To facilitate interactions between the children, teachers modeled appropriate social behaviours for the sighted children and used cues and prompts to instruct the visually impaired child. Of the 1208 interaction units recorded in the present study, approximately 10 percent of these involved interactions between visually impaired and sighted children. Hence, the level of interaction reported in the Taylor-Hershel and Webster (1983) study was not observed in the present study.

A second assumption of integration is that nonhandicapped children benefit from integration (Guralnick, 1976). Nonhandicapped children are believed to demonstrate an increased sensitivity to, and greater acceptance of handicapped children after involvement with them (Field et al., 1981, Sandys & Piet, 1986). The low levels of interaction observed in this study suggest that more planning may be necessary to maximize the social opportunities that exist for the visually impaired and sighted children in these preschools.

In addition to demonstrating low levels of social involvement, the visually impaired children were rated as

having significantly less well developed adaptive skills than the sighted target children on the Vineland Adaptive Behaviour Scale by both their parents and teachers. However, the parents and teachers did not provide similar assessments of the visually impaired children's level of functioning as was hypothesized. Teachers rated the visually impaired children significantly more positively than did the children's parents on the Vineland Adaptive Behaviour Composite as well as the Daily Living Skills and Motor Development domains. This finding was opposite to that expected. Teachers may perceive these children as possessing more well developed skills in the areas of eating, dressing, personal hygiene, classroom skills, and, large and fine motor movement and control, respectively, because the preschool environment places an emphasis on skill learning and self sufficiency. Parents of the visually impaired children may, on the other hand, perceive their children in a more dependent role and underestimate their child's abilities in these domains. The teachers interviewed in this study perceived the visually impaired children in a relatively positive light in comparison to the parents interviewed. This finding reflects positively on the potential for successfully integrating visually impaired children into regular and rehabilitative preschools. For example, the teachers' positive evaluations of the visually impaired children suggests an appreciation of each child's

abilities and strengths to participate in the preschool routine, a basic starting point for successful integration.

Parents and teachers provided similar assessments of the visually impaired children's Communication and Socialization Skills. These domains measure a child's ability to understand and follow directions, their use of gestures and/or speech to communicate with others, and, how a child interacts and plays with others, and spends their leisure time, respectively. The visually impaired children were rated by both parents and teachers as functioning approximately two standard deviations below the normative level, indicating delayed acquisition of appropriate communication and socialization skills.

The observed deficits in the Communication and Socialization skills of the visually impaired children may help explain their low level of involvement in the preschool program. Deficits in these areas may limit a visually impaired child's ability to interact appropriately and meaningfully with peers. Although the parents and teachers evaluated the visually impaired children as delayed in the acquisition of communication and socialization skills, the Behaviour Observation data indicate that these children possess some knowledge and ability to interact with others. The low frequency with which these children were observed to interact with others, especially their peers, may compound their existing deficits and reduce their opportunities to

practice and enhance already acquired skills. To be effective, program development should address the strengths and weaknesses of each visually impaired child's level of adaptive functioning and degree of involvement. Nonetheless, given the visually impaired children's overall deficits in adaptive functioning it is likely that program development and implementation may prove very difficult.

Although parents and teachers evaluated the visually impaired children as possessing less well developed adaptive skills compared to the sighted target children, neither group evaluated the visually impaired children's degree of participation in the preschool programs unfavorably. This finding is contrary to literature published by other authors (e.g. Simon & Gillman, 1979, Tait & Wolfgang, 1984). For example, preschool teachers interviewed in the present study perceived the enrollment of visually impaired children in rehabilitative or regular preschool programs as a positive and challenging experience. Although teachers did express concern regarding limited curriculum information and the need for additional support services none of the six teachers interviewed considered the enrollment of visually impaired children in negative terms. Also, in spite of the difficulties inherent in the process, all teachers were pleased with the gains and involvement of the visually impaired children in the preschool programs.

Parents of visually impaired children echoed the

perceptions of the preschool teachers, speaking highly of their child's program and teachers. Overall, both the parents and teachers indicated that they perceived the visually impaired children to be as involved in the preschool program as the sighted children. Parents of sighted children were also pleased with the presence of visually impaired children in the preschool program, considering it an excellent learning opportunity for their own children as well.

None of the teachers or parents interviewed mentioned concerns similar to those raised by Simon and Gillman (1979), or Tait and Wolfgang (1984). For example, no mention was made of the sighted children expressing fears of becoming blind, or of their increased avoidance of the visually impaired children. Also, no mention was made of the visually impaired children's passivity in initiating contact with others, or of their inconsistent participation during circle time, which the author observed.

Tait and Wolfgang (1984) also reported that sighted children tried to help the visually impaired child too much, competed for her attention, and treated her as a baby during play. None of these behaviours were observed by the author, or reported by the teachers or parents of the visually impaired children. In contrast, during most free play activities the visually impaired children were observed to play independently of the sighted children. This occurred

even when the visually impaired children were near other children.

Conclusions.

Teachers interviewed in the present study had not developed or adopted any specific programming to encourage or facilitate social interactions between the sighted and visually impaired children. In fact, during the observation periods, only one teacher was observed to encourage two sighted children to play with a visually impaired child. These observations suggest that although teachers and parents perceived the integration of visually impaired children as a positive and successful endeavour, their perceptions are not entirely supported by the behavioral observations. In addition, the behaviour observations indicate the need for social skills training at the preschool level to teach, encourage and reinforce social interactions. This type of training needs to be directed at both sighted and visually impaired children to encourage sighted peers to interact and play with the visually impaired children, and to encourage the visually impaired children to be more assertive and involved with their environment through social contacts with peers.

It is evident from the findings of this study that the integration of visually impaired children can be a successful endeavour. Teachers and parents of both sighted and visually impaired children evaluated the enrollment of

visually impaired children in preschool programs positively. In addition, both groups of parents welcomed the opportunity to have their child involved in such programs.

Even though parents and teachers may view the integration of visually impaired children positively, the success of integration will be enhanced by the presence of specialized programs. Without such programs, the low levels of involvement between visually impaired and sighted peers observed in this study will likely continue to occur.

Program development and implementation should take into account the socialization and communication deficits experienced by visually impaired children to maximize the interaction opportunities between visually impaired and sighted peers.

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Appendix BParent Questionnaire

1. What were your reasons for enrolling your child in this preschool program?
2. What has been your experience with the program? Has it been a good idea for your child?
3. What are the things you like about the program? What do you dislike?
4. How do you think your child has changed since being enrolled in the preschool program?
5. Are you pleased with these changes?
6. Has your child become actively involved in the preschool program?
7. What are your plans for your child after preschool?
8. What would be the ideal next step for your child?
9. What could the community do to improve services offered to you and your child?
10. How do other individuals in the preschool respond to you and your child?
11. Do you think visually impaired children should be enrolled with other visually impaired children, or in a regular preschool setting?

Appendix C

Teacher Questionnaire

1. How do you feel about having a visually impaired child in your preschool program?
2. Has it been easy or difficult for you?
3. Have you found it necessary to implement any special programming to serve the visually impaired children in your program?
4. How do you think each visually impaired child has changed since being enrolled in the preschool program?
5. Are you pleased with these changes?
6. Have the visually impaired children become actively involved in the preschool program?
7. How do other individuals in the preschool respond to you and your child?
8. What plans would you recommend for each visually impaired child after preschool?
9. What would be the ideal next step for each visually impaired child?
10. What kinds of services should be available for visually impaired children and their families?
11. Do you think visually impaired children should be enrolled with other visually impaired children, or in a regular preschool setting?

Appendix D

Letter of Introduction to Teachers and
Teacher Letter of Permission

Preschool Address

Dear Supervisor:

I am interested in studying the social behaviours of visually impaired children enrolled in preschool programs. Unfortunately, very little literature is available which looks at this area. Consequently, I am interested in gathering observational information about how visually impaired children function in preschool or day care settings. My goal is to provide a greater understanding of the procedures or strategies which facilitate or interfere with the successful participation of these children in preschool programs.

I am writing to request your permission to observe the visually impaired and sighted children enrolled in your preschool program, and to interview you and their parents about each child's preschool activities.

In this study, I will be observing visually impaired and sighted children as they play with each other, as well as interviewing their parents and teachers. The observation

sessions will occur during normal preschool hours. During this time I will not interact with the children, but will observe them as unobtrusively as possible, as they move through the preschool/day care routine.

In addition, I would like to interview a teacher familiar with each child participating in the study, as well as the child's parents. The parent interviews will be held in the parent's home and will take approximately an hour to an hour and a half. The teacher interviews will take approximately 30 minutes, and will be arranged at your convenience.

If you agree to participate in the proposed study, I will ask you to send letters of permission to all parents who have a child enrolled in your program meeting the criteria for visual impairment (The significant loss of vision resulting in the need for specialized services, including children who are registered as legally blind, and those who are considered partially sighted) and an equal number of same-sexed sighted children in the same age group.

I hope to be able to gather information from the perspective of all involved; child, parent and teacher, so that recommendations can be made to enhance the educational services available to special needs children and their families.

If you have any questions, please do not hesitate to call me during the evenings at 256-6093.

Thank you for your consideration.

Yours sincerely,

Alison Crocker, B.A.(Hons.)

Graduate Student, Department of Psychology

R. Robert Orr, Ph.D. C. Psych.

Supervisor & Head, Department of Psychology

Teacher Letter of Permission

I _____ give my permission to Alison
(Day Care/Preschool/Nursery School Supervisor)
Crocker, Graduate Student, University of Windsor, to observe
visually impaired and sighted children enrolled in my
day-care/preschool/nursery school program, and to interview
a preschool teacher familiar with each child participating
in the study.

I understand that the day care's participation is
completely voluntary, and that the day care may withdraw
from the study at any time. I also understand that all
information collected will be confidential and any
information presented about the research will protect the
identity of each child, family and day care/preschool or
nursery school.

Signature

Date

Appendix E

Letter of Introduction to Parents and
Parents Letter of Permission

Dear Parent:

I am writing to request your permission to observe your child during a typical day at day care and to interview you and your child's teacher about your child's preschool activities.

I am studying the social behaviours of visually impaired preschool children in preschool/day care programs in the tri-county area. My goal is to provide a greater understanding of the procedures or strategies which facilitate or interfere with the successful development of visually impaired children in such programs.

To achieve this goal, I will be observing children as they play with each other during the day, as well as interviewing parents and teachers. The observation sessions will occur during normal day-care hours. During this time I will not interact the children, but will observe as unobtrusively as possible during the day-care routine.

The parent interviews should take between an hour to an hour and a half with the place and time to be arranged at your convenience. The teacher interviews will take

approximately 30 minutes.

I hope to be able to gather information from the perspective of all involved; child, parent and teacher, so that recommendations can be made to enhance the educational services available to special needs children and their families.

If you have any questions, please do not hesitate to call me during the evenings at 256-6093. I have attached a consent form for you to fill out and return to your child's teacher.

Thank you for your consideration.

Yours sincerely,

Alison Crocker, B.A. (Hons.)

Graduate Student, Department of Psychology

R. Robert Orr, Ph.D. C. Psych.

Supervisor, & Head, Department of

Psychology

Parents Letter of Permission

I _____ give my permission to Alison
 (Parent or Guardian)
 Crocker, Graduate Student, University of Windsor, to observe
 my son/daughter _____ at the
 _____ and to interview both myself and my
 child's preschool teacher about my child's activities in the
 day care program.

I may be reached at _____ during the hours
 (telephone number)

_____ to arrange an appointment for my
 interview.

I understand that both my child's and my participation are
 completely voluntary, and that I or my child may withdraw
 from the study at any time. I also understand that all
 information collected will be confidential and any
 information presented about the research will protect the
 identity of each child, family and day care.

 Signature

 Date

VITA AUCTORIS

Alison D. Crocker graduated from the University of Winnipeg, Winnipeg, Manitoba in May 1984 with a Bachelor of Arts, Honours degree in Psychology. After working for approximately two years she enrolled at the University of Windsor, Windsor, Ontario in September 1986. She is currently completing requirements towards her doctoral degree in Clinical Psychology.