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# Development And Outcomes Of An Experientially-Based Nonverbal Social Skills Curriculum For Youth With Visual Impairments

Rebecca J. Cicha

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DEVELOPMENT AND OUTCOMES OF AN EXPERIENTIALLY-BASED  
NONVERBAL SOCIAL SKILLS CURRICULUM FOR  
YOUTH WITH VISUAL IMPAIRMENTS

by

Rebecca Joyce Cicha  
Master of Arts, University of North Dakota, 2009

A Dissertation

Submitted to the Graduate Faculty

of the

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In partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

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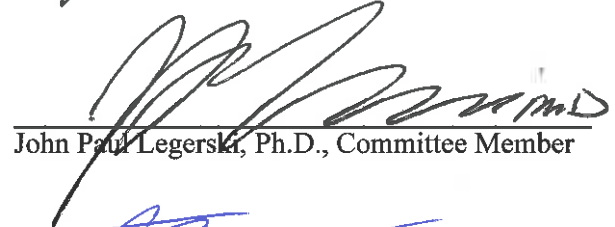
This dissertation, submitted by Rebecca J. Cicha in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.



F. Richard Ferraro, Ph.D. , Chairperson



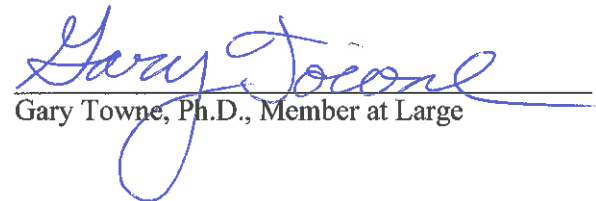
April Bradley, Ph.D., Committee Member



John Paul Legerski, Ph.D., Committee Member




Joseph Miller, Ph.D., Committee Member



Gary Towne, Ph.D., Member at Large

This dissertation is being submitted by the appointed advisory committee as having met all of the requirements of the Graduate School at the University of North Dakota and is hereby approved.

  
Payne E. Sutfin  
Dean of the Graduate School  
June 28, 2013  
Date

Title           Development and Outcomes of an Experientially-Based Nonverbal Social Skills Curriculum for Youth with Visual Impairments

Department   Clinical Psychology

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Rebecca J Cicha  
July 1, 2013

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## ABSTRACT

The importance of social skills training for youth with visual impairments has been widely researched within educational and rehabilitation settings. To date, social skills training curricula for visually impaired youth have largely utilized verbally-based methods for instruction and training. Given the non-visual aspects of human communication, it is proposed that verbal approaches to nonverbal social skills training may not be sufficient for visually impaired individuals. To address this issue, an experiential curriculum of nonverbal social skills training was developed that emphasized hands-on learning and practice of nonverbal social skills. This curriculum was administered to seventeen visually impaired youth attending short-term rehabilitative programming in North Dakota. Outcomes of this intervention were measured through repeated administrations of the Social Skills Rating Scales, Social Skills Assessment Tool for Children with Visual Impairments, and a modified nonverbal social skills checklist. Results of the current investigation yielded statistically insignificant effects of the nonverbal social skills curriculum intervention. Alternatively, visual analysis indicated trends of improved general social skills during and immediately after participation in the social skills intervention and improved nonverbal social skills during the intervention. Discussion of limitations and clinical implications of this study follows, emphasizing the need for ongoing research and development of social skills programs for visually impaired youth.

## CHAPTER I

### INTRODUCTION

#### Visual Impairment: Definitions, Assessment, Prevalence, and Functional Limitations

A number of key terms are conventionally used to describe degree of visual experiences and abilities, the most prominent of which include *visual impairment*, *legal blindness*, *visual acuity*, and *visual field*. According to the definitions provided by the American Foundation for the Blind (nd), *visual impairment* is a global term used to represent any type of abnormal vision loss and includes conditions colloquially referred to as blindness and low vision. *Legal blindness* is defined as the threshold beyond which an individual's sight is significantly compromised, when compared to a normative population, in the domains of visual acuity or range of visual field (American Foundation for the Blind, nd). As a metric used to determine degree of visual impairment, *visual acuity* is the degree to which the visual representation of a target within the visual field is viewed clearly, or in sufficient detail, as compared to the normative population. Lastly, as another metric used to determine the presence and degree of functional vision impairment, *visual field* is generally defined as the full range of functional vision across the horizontal, vertical, and oblique peripheral axes of each eye (American Foundation for the Blind, nd; Ormerod & Mussat, 2006).

In terms of diagnosis, methods of assessing functional vision and diagnosing visual impairment generally utilize measures of visual acuity and visual field. Visual

acuity is conventionally measured by the *Snellen Scale* test, which incorporates the use of a white poster containing an image of the big black “E,” followed by a series of random letters, arranged in descending lines of decreasing letter size (Ormerod & Mussat, 2006). When conducting an assessment with the Snellen Scale, a person’s accurate detection and identification of individual letters on a given line is compared to the performance of “normally” sighted individuals (Ormerod & Mussat, 2006). Results of the Snellen Scale measure are then given in the form of a normatively interpretable ratio: “20/20” vision indicates that an individual can accurately identify a target at a distance of 20 feet that an individual with unimpaired vision can see at 20 feet (Ormerod & Mussat, 2006).

As is indicated, a 20/20 Snellen ratio is used as a general reference point for unimpaired vision, with unimpaired vision ratings ranging from 20/12.5 to 20/25 (Ormerod & Mussat, 2006). Using the Snellen scale, an individual with a rating of 20/200 (i.e., accurately seeing a target from 20 feet that an individual with normal vision can accurately see at 200 feet) meets criteria for legal blindness, specifically for individuals that obtain 20/200 or less acuity in their better eye with visual correction (Ormerod & Mussat, 2006). Lastly, an individual’s visual field is a second critical variable used to assess functional vision and diagnose visual impairment. In this case, legal blindness can be assigned to an individual with better than 20/200 vision if their visual field is limited to a 20 degree arc of central vision or less (Ormerod & Mussat, 2006).

Visual impairment is a relatively low base rate condition that impacts individuals of all ages and from a variety of causes. In an investigation conducted by the World Health Organization in 2002, global estimates of the prevalence of visual impairment and most common etiologies of vision loss were surveyed. According to this investigation,



the number of individuals living with some degree of visual impairment, internationally, was estimated to be a total of 161 million persons (Resnikoff, Pascolini, Etya'ale, Kocur, Pararajasegaram, Pokharel, & Mariotti, 2004). Of this figure, 124 million persons were identified as living with low vision and 37 million persons were identified as legally blind (Resnikoff et. al, 2004). Etiologically, the most common causes of visual impairment identified in this investigation were: cataract, glaucoma, and macular degeneration, respectively (Resnikoff et. al, 2004).

Despite the diverse medical conditions that can cause or contribute to visual impairment, a standard method of categorizing vision loss includes a basic assessment of the developmental context in which the vision loss occurred. Generally speaking, *congenital vision loss* occurs as a function of genetic or early developmental abnormalities and is typically detected during early childhood (Resnikoff et. al, 2004). Alternatively, *adventitious* or *acquired vision loss* can occur at any stage of life and result from a variety of causes, the most common of which are known to include: traumatic brain injury, degenerative diseases (e.g., diabetic retinopathy and macular degeneration), and acute neurological conditions (e.g., brain tumors and meningeal infections) (Carroll, 1961). Based on Resnikoff et. al's 2004 review, adult-onset blindness is found to be significantly more prevalent than childhood-onset, with 82% of blind individuals representing an age group of 50 years or older. Additionally, when controlling for age, women were more likely to be visually impaired than men in all regions surveyed at ratios ranging from 1.5 to 2.2 (Resnikoff et al., 2004).

Moving beyond statistics, etiologies, and categorizations, functional visual impairment moves beyond measures of visual acuity or visual fields into subtler domains

of qualitative visual experiences. Though common stereotypes of blindness persist within contemporary culture, including notions of living in darkness or blackness, it is actually well-documented that the majority of visually impaired individuals retain some degree of functional vision (Carroll, 1961). In this vein, historical estimates indicate that as few as 1 in 30 legally blind individuals live without a degree of light detection and even severely impaired individuals (i.e., those who have had their eyes removed) still can receive a degree of visual stimulation from the optic nerve or associated afferent fibers to create abstract internal color experiences (Carroll, 1961). As a whole, it is clear that visual impairment is a multifaceted, heterogeneous condition that carries varying degrees of perceptual experiences and associated functional impairments.

#### Social Skills of the Visually Impaired

As a whole, visual impairment is intricately associated with a number of functional challenges that may impact individuals in a variety of personal and interpersonal life domains. Of particular relevance to the current investigation, individuals with visual impairments, particularly those who experienced impaired vision status at a young age, are consistently described as having social skills that are below expectations when compared to their sighted peers (Bremer & Smith, 2004). Generally speaking, socially skillful behavior is seen as a highly integral component of daily functioning across non-disabled and disabled individuals alike. Of particular note, social skills have also been empirically associated with the creation and maintenance of friendships, cultivating acceptance from others, increasing positive interpersonal relationships, and promoting success at school and work (Bremer & Smith, 2004).

Alternatively, a number of empirical investigations have indicated that the failure to employ adaptive social skills is associated with unwanted social consequences including interpersonal conflicts, decreased quantity and quality of relationships, loneliness, embarrassment at school or around peers, and job loss (Bremer & Smith, 2004). Similarly, Kef (2002) investigated the role of social support networks and associated psychosocial adjustment factors in a sample of visually impaired youth. Though Kef (2002) concluded that visually impaired youth matched a majority of the developmental outcomes met by their sighted peers, select socially-mediated factors proved to be unique challenges to their psychosocial adjustment status. Specifically, adolescents with visual impairments were observed to have smaller social support networks, fewer friends, and generally less social support (Kef, 2002). In this case, peer support was seen as a particularly significant variable of psychosocial adjustment in addition to the size and degree of perceived support from the social networks accessible to the youth in this investigation (Kef, 2002). As a whole, psychosocial factors of loneliness, self esteem, and well-being were best predicted by level of social support (Kef 2002), demonstrating the heightened need for positive social networks for this population of youth.

Moving beyond the creation and maintenance of interpersonal social support networks, other variables have been demonstrated to serve a significant role in the development of adaptive social skills and overall adjustment to visual impairment. Intrapersonal variables, including the presence of psychological disorders, cognitive disabilities, and physical disabilities have been viewed as highly associated with underdeveloped social skillfulness (Bremer & Smith, 2004). With specific regard to

vision loss, the reduced social skillfulness evident in visually impaired individuals has been hypothesized as secondary to a number of factors including unhealthy early attachments to primary caregivers and deficient social learning opportunities (Van Hasselt, 1983; Bremer & Smith, 2004; Sacks & Wollffe, 2006). In regard to social learning, investigators have suggested that vision loss significantly limits an individual's ability to fully engage within the context of a social learning environment and access critical social information that is often non-visual in nature (e.g., body language, gestures) (Van Hasselt, 1983; Bremer & Smith, 2004; Sacks & Wollffe, 2006). Specifically, this effect has been largely explained by the challenge or inability for a visually impaired individual to accurately sense, perceive, and interpret visually-mediated social cues (Van Hasselt, 1983; Bremer & Smith, 2004; Sacks & Wollffe, 2006).

Empirical assessments of visually impaired youth have also investigated specific areas of social skills competencies of visually impaired individuals, particularly within the domain of nonverbal communication skills, play behaviors, and assertive communication skills. In 1985, Van Hasselt, Hersen, and Kazdin assessed the social functioning of visually impaired adolescents using standardized interviews, parent ratings, judgments of physical attractiveness, and role-play tests. Overall, the investigators noted the presence of skill deficiencies in demonstrated nonverbal social behaviors, speech duration, speech disturbances, and relatively limited use of open-ended questions for visually impaired individuals when compared to sighted controls (Van Hasselt, Hersen, & Kazdin, 1985).

Assessments of children's play styles have also indicated the presence of core differences in social skill competencies and social play styles when comparing visually-

impaired and sighted children. In Rettig 1994's investigation, visually impaired children were observed to typically spend more time playing alone (i.e., 56% of their time) when compared to sighted peers (i.e., 14% of their time). Visually impaired children were also observed to spend significantly more time playing with adults than with similar-aged peer groups as compared to their sighted peers (Rettig, 1994). Additionally, other researchers have indicated that impaired vision likely contributes to significant differences in play styles of children that may ultimately influence early social behaviors and the frequency and quality of their social interactions. Specifically, Recchia (1987) noted that, as sighted children's play often involves visually-mediated nonverbal, non-vocal, quick, and unpredictable movements, visually impaired children often cannot participate to the extent of their sighted peers in a play group. Consequently, visually impaired children were observed to spend a disproportionate amount of their play time waiting for audio cues of peers and often default to more passive or solitary play styles (Recchia, 1987).

With regard to specific nonverbal communication behaviors, Sharkey and Asamoto (2000) noted significant differences in hand gesturing behaviors in a sample of visually impaired individuals when compared to sighted controls. In this investigation, when visually impaired individuals were paired with a stranger in conversational dyads, they utilized significantly fewer overall gestures than sighted counterparts, more gestural *adaptors* (i.e., gestures related to increasing bodily comfort such as self-touch and re-positioning), and fewer *illustrators* (i.e., gestures that emphasize verbal content such as hand movements to stress the importance of words) and *emblems* (i.e., gestures that mirror or effectively replace the verbal content of a message, such as pointing or waving "hello") than sighted participants (Sharkey & Asamoto, 2000; Eckman & Friesen, 1969).

A second point illustrated in Sharkey and Asamoto's (2000) investigation, visually impaired persons also demonstrated highly variable gesturing when in the presence of sighted participants. In interpreting this finding, the investigators hypothesized that differential performance expectancies and levels of self efficacy may account for this behavior. Specifically, the investigators proposed that the frequency of gesturing displayed by a visually impaired individual may be increased due to the expected communicative salience to a sighted individual (Sharkey & Asamoto, 2000).

Additionally, Sharkey and Asamoto (2000) hypothesized that gesturing may also decrease as a function of a person's decreased confidence in their ability to accurately or appropriately execute nonverbal signals to a sighted receiver. In this case, the importance of social skills training was indicated to counter the potentially detrimental effects of negative social appraisals during which sighted individuals may be more likely to judge visually impaired individuals as "powerless, uninvolved, disinterested in the conversation and the conversational partner, and ineffective," if gesturing is absent or occurs at low frequency (Sharkey & Asamoto, 2000). As such, the investigators proposed that reducing unwanted gestural adaptors and increasing gestural illustrators and emblems may serve to improve the effectiveness of nonverbal communication efforts of visually impaired individuals (Sharkey & Asamoto, 2000).

In addition to the qualitatively different development of socially skillful behaviors, researchers have also consistently demonstrated that visual impairment frequently co-occurs with the presence of *stereotypic behaviors*. By definition, stereotypic behaviors have been described as abnormal behaviors that are performed repetitively or ritualistically and are generally viewed as socially dysfunctional,

disruptive, and inappropriate (McHugh & Lieberman, 2003). According to recent estimates, visually impaired individuals, particularly those with congenital or childhood-onset vision loss, are more likely to demonstrate socially inappropriate stereotypic or idiosyncratic behaviors (McHugh & Lieberman, 2003). *Stereotypic rocking* (i.e., rocking the body back and forth), though common in sighted infants, is a behavioral feature frequently seen in visually impaired children that often persists across developmental stages (McHugh & Lieberman, 2003).

Experimentally, McHugh & Lieberman (2003) examined various developmental correlates of persistent stereotypic rocking behavior in a sample of visually impaired children. Of the commonalities found between rocking and non-rocking youth, the strongest positive correlates of rocking behavior included: congenital onset of blindness, prematurity at birth, low birth weight, and extensive medical treatments (e.g. multiple hospitalizations and length of hospital stay, multiple surgeries) (McHugh & Lieberman, 2003). Overall, rocking behaviors were hypothesized to emerge from a number of potential causes including restricted early mobility and limited social and tactile contact with primary support persons during critical motor development stages (McHugh & Lieberman, 2003).

Beyond the severity and potential causes of rocking behavior, McHugh and Lieberman (2003) noted the presence of parental and teacher distress over rocking behavior, presumably due to the negative social impact of the stereotypic behavior. Parent and teacher stress was also conceptualized as potentially due to the persistent attempts to extinguish the rocking behavior through various behavioral modification methods (e.g., token economies, verbal and nonverbal feedback, reinforcement

replacement) (McHugh & Lieberman, 2003). As a whole, though systematic investigations have not clearly elucidated the nature and impact of negative social appraisals as associated with stereotypic behavior, stereotypic behaviors remain a target for behavioral control in home, school, treatment, and rehabilitation settings for youth with visual impairments.

#### Social Skills in the Rehabilitative Education Model: The Expanded Core Curriculum

Within vision rehabilitation settings, individuals may receive varying levels of care, within outpatient and residential rehabilitative contexts, and across short and long-term rehabilitation periods (Lohmeier, 2006). Despite the level of care received, the core targets of education and rehabilitation remain relatively consistent across programs and are specifically tailored to the needs of those living with visual impairment (Lohmeier, 2006). Of the most commonly utilized teaching methods in structured rehabilitative programming, the *Expanded Core Curriculum* (ECC) is model in which visually impaired individuals receive focused instruction and opportunities to practice key skills in various life domains impacted by visual impairment including orientation and mobility, independent living skills, Braille instruction, adaptive technology lessons, recreation and leisure, vocational rehabilitation, and social skills (Lohmeier, 2006).

Considering the ample evidence suggesting the need for social skills training for individuals with visual impairments, social skills training curricula have also been incorporated into the general ECC model within training and rehabilitative settings for visually impaired individuals (Lohmeier, 2006). Within the ECC model of vision rehabilitation, current social skills training modules generally incorporate a review of core behavioral and interpersonal targets including conversation skills, boundaries,



relationship skills, vocal expression, emotional expression, body language, facial expressions, boundaries, gestures, personal appearance (Sacks & Wolffe, 2006). Across the commercially-available social skills programs tailored to individuals with visual impairment, these core skills are addressed in a variety of formats and generally include intervention delivery methods of group discussion, personal reflection, and peer consultation to facilitate learning (Sacks & Wolffe, 2006).

#### Experimental Outcomes of Social Skills Training Procedures

It is clear that visual impairment is significantly associated with an increased potential for reduced social skillfulness or the presence of socially-inappropriate behaviors or mannerisms, indicating a need for continued research and applied interventions within educational and rehabilitative settings. To address this need, numerous attempts have been made to improve the social support networks and social skills of visually impaired youth through a variety of skills-training paradigms. In a qualitative single case design including five visually impaired youth, Peavey and Leff (2002) utilized a team-building, group discussion, peer feedback, and trust-creating approach to increase social skillfulness and interconnectedness of visually impaired youth with a group of sighted peers. Following participation in this skills-training program, behavioral improvements were noted in four out of the five visually impaired participants on measures of self-isolation, shyness, and inappropriate or “weird” social behaviors after participating in the proposed protocol (Peavey & Leff, 2002).

Other investigations have examined variables of the methods of social skills training delivery systems including classroom emphasis on social interconnectedness and differential sources of classroom medication and behavioral feedback (D’Allura, 2002).

Comprehensive teaching systems designed for use with visually impaired children have also been employed to increase the development, generalization, and maintenance of social skills and social interaction behaviors. One teaching paradigm that has been commonly implemented, namely, the *Cooperative Learning Strategy*, incorporates activities that emphasize interdependence amongst peers, positive and skillful interactions amongst peers, and promotion of self-esteem (D'Allura, 2002). Due to its emphasis on promoting adaptive social behaviors, the *Cooperative Learning Strategy* system has been commonly employed in integrated classrooms of sighted and visually-impaired students and has been tested for its effectiveness.

In an outcomes effectiveness investigation of this method, D'Allura (2002) noted the presence of overall improvements in social behaviors of the visually impaired preschoolers in an integrated classroom setting. Specifically, visually impaired students were observed to spend less time engaging in solitary play (i.e., increased from <5% to >20% of play time with peers), spend more time interacting with peers, and increase self-initiated play with peers (D'Allura, 2002). Ultimately, the *Cooperative Learning Strategy* system was viewed as superior to basic integration classroom practices and led investigators to conclude that simply mainstreaming sighted and visually impaired students into the same environment appeared insufficient to create gains in interaction skills and overall levels of social integration when compared to an interactive, teamwork-based approach (D'Allura, 2002).

In another study examining the outcomes effectiveness of social skills training programs, Sacks and Gaylord-Ross (1989) investigated the relative short term and long term effectiveness of peer-mediated and teacher-directed forms of social skills training

curricula. Methodologically, 15 legally blind individuals aged 7 to 22 years were assigned to participate in a control, peer-mediated, or teacher-directed social skills group; social skills acquisition was measured through pre and post assessment via peer questionnaires, teacher observation, and social competence measures (Sacks & Gaylord-Ross, 1989). The results of the investigation indicated that the teacher-directed social skills training paradigm yielded the highest short-term social skills acquisition gains; however, the peer-mediated social skills curriculum was associated with both significant short and long-term social skills acquisitions (Sacks & Gaylord-Ross, 1989).

In another line of outcomes effectiveness research, the role of sighted-other feedback has also been significantly implicated in the development and maintenance of socially skillful behaviors in youth with visual impairments. In 2004, Jindal-Snape noted differential effects following the provision of verbal feedback of social behavior when taking into account the source of the verbal feedback. Specifically, verbal feedback given by non-peer authority figures (e.g., parents, teachers, experimenters) was viewed as less salient to the visually impaired receiver (Jindal-Snape, 2004).

Subsequently, Jindal-Snape (2005) conducted an additional line of research that further examined the role of feedback and feedback-recruitment strategies. In a follow-up single case examination, successful gains in social skills of a visually impaired child (i.e., nonverbal social skills of gaze direction), were evident when the child was given feedback from sighted peers in a classroom setting (Jindal-Snape, 2005). This case also evidenced increased maintenance and generalization of the targeted social skill behavior following the completion of the intervention, which was largely viewed as a function of the peer-based source of verbal feedback (Jindal-Snape, 2005).

As a final note, these investigators noted a number of unintentional benefits from this intervention, including the unintentional recruitment of other sighted peers who also provided feedback to the visually impaired child, peers provided additional verbal feedback relevant to the visually impaired child (e.g., verbal cues describing the entrance or exit of people in the room), and the sighted peer's provision of extra visual and tactile information to aid in accessibility and understanding of feedback (e.g., hand-over-hand techniques to demonstrate object size, lack of visually-rooted verbalisms). Overall, this study highlighted the use of specific methods to increase generalization of social skills gains through utilization of select feedback, particularly the feedback of sighted peers.

#### Experiential Methods Employed in Social Skills Training

Due to the unique nature of visual impairment and its functional limitations, researchers and educators have proposed a number of considerations to employ when developing any educational or training curriculum for visually impaired individuals. Firstly, due to the minimal sensory input provided by visual stimuli, visually impaired individuals must, by default, use other sensory systems to gain access to information (Sacks & Wolffe, 2006). In this way, educators are encouraged to utilize specific activities and techniques that incorporate multisensory stimuli (e.g., tactile, kinesthetic, smell) to augment learning experiences. Similarly, other researchers and educators have noted within the literature that students with visual impairments generally require a more experiential learning experience than what is traditionally employed in educational and training settings (Sacks & Wolffe, 2006).

A specific example highlighting the importance of utilizing experiential teaching techniques was published within the context of a sex education program and follow-up

focus group of participating students with visual impairments (Krupa & Esmail, 2010). In this program, feedback provided from the focus group indicated that visually impaired participants often felt lost during the education series due to the heavy reliance placed on visual media and verbal descriptions of physical characteristics (Krupa & Esmail, 2010). Instead, members of the focus group noted that they preferred an emphasis on tactile experiences to aid in understanding of concepts, if possible (Krupa & Esmail, 2010). Lastly, in this investigation, controlled practice of nonverbal social behaviors with sighted individuals was also viewed as an important educational component to increase social skillfulness in interpersonal situations to avoid potential “communication breakdowns” between sighted and visually impaired individuals (Krupa & Esmail, 2010).

Other investigations have emphasized the role of assertiveness training on the performance and long term generalization of socially effective behavior. Historically, various researchers have reported that assertive behaviors are associated with improved coping skills, decreased aggressive or problematic behaviors, and increased positive social behaviors (Rotheram & Armstrong, 1980; Huey, 1988; Turner et al., 1993). In 2003, Kim developed an assertiveness training protocol (i.e., Assertiveness Training Curriculum for Adolescents with Visual Impairments, ATCAVI) in which visually impaired adolescents were taught the importance and rationale for behaving assertively, behaviors associated with assertiveness (e.g., nonverbal, verbal, and paralinguistic behaviors), and coping strategies to address potential cognitive distortions that may prevent the utilization of skillful assertive behaviors.

Methodologically, Kim (2003) employed core strategies of didactics, discussion, and provided the students opportunities to practice course concepts through role plays

and assigned homework (Kim, 2003). The results of this investigation yielded no significant treatment effects on measures of self-reported social skills, teacher-rated social skills, self-reported cognitive distortions, and observer ratings of assertiveness (Kim, 2003). However, marginally significant treatment effects were found within the domain of self-reported gains in assertiveness; youth participating in the treatment group rated their assertiveness skills as higher than youth in the control group (Kim, 2003).

Of note, a number of explanations were offered to explain the apparent ineffectiveness of Kim 2003's program. Of the considerations offered, the most prominent included the relatively non-intensive programming schedule utilized (i.e., the sessions were offered once a week), the inconsistent execution of the role play components of the program, minimal participant compliance with homework completion, and overall low statistical power yielded from the small size of the sample studied (Kim, 2003). Ultimately, considering the presence of marginally significant gains in self-reported assertiveness skills, the need for future efforts at refining the methodology of training programs to instill socially skillful behaviors is evident.

Research and development of social skills curricula for the visually impaired has also incorporated elements of experiential practice or role play to bolster social skills acquisition. In 1991, Bieber-Schut experimented with a drama-based approach to teach social skills to adolescents in a hands-on and entertaining manner. Overall, through the course of a short-term rehabilitative programming session, the effects of teaching drama techniques on skills acquisition was assessed and indicated positive effects of participation on social skills gains (Bieber-Schut, 1991).

Other experiential training attempts have been made to improve the body presentations and physical abilities of visually impaired individuals, largely through physical rehabilitation or athletic training. In 2006, Larsson and Frandin implemented a structured body awareness and dance training protocol in an attempt to increase the physical abilities of a sample of adventitiously blind adults in Stockholm, Sweden. Upon the conclusion of the study, significant gains in functional reach (i.e., the ability to reach forward), and, to a lesser extent, gains in balance and gait were also noted (Larsson & Frandin, 2006). Although this investigation was conducted largely within the theoretical context of physical rehabilitation (i.e., increasing physical ability and decreasing the likelihood of future physical injuries), the implication of body awareness training can easily be extended to meet aims of improving social skills through increased efficacy of nonverbal presentation.

A similar line of research was conducted by Lieberman, Schedlin, and Pierce (2009) in an effort to increase opportunities for physical activity, and improved motor skills, social connectedness, and self concept of visually impaired students by teaching them how to jump rope. A number of strategies were explored in an effort to identify ideal procedures for the teaching and generalization of jump rope techniques including the usage of varying adaptive jump rope materials and the use of floor mats for orientation and safety (Lieberman, Schedlin, and Pierce, 2009). Ultimately, the authors provided a number of adaptive possibilities to increase overall accessibility of a largely visually-mediated activity to increase overall physical activity levels, perceived self-confidence, and opportunity for socialization.

As a whole, a number of contemporary studies have utilized techniques to teach a variety of independent living, leisure, communicative, and social skills behaviors. Although these studies appear to show a degree of promise toward the differential effectiveness of using experiential methods to teach select skills, relatively few are represented in the literature, and fewer have focused on social skills as therapeutic or educational targets. Overall, considering the effectiveness of these procedures in general and socially-related settings, further research is indicated to support the future development of potentially effective methods of social skills instruction in vision rehabilitation settings.

#### Moderators of Skillful Behavior: Self Efficacy and Theories of Human Agency

For the purpose of designing an educational or skills training system to yield maximal gains on specific targets of human performance (e.g., socially skillful behavior), it is imperative to invoke core psychological theories that account for the emergence and maintenance of human behavior. Within the traditional psychology literature, one of the major theories proposed to account for the learning of new human behavior, within social learning contexts, is Albert Bandura's social cognitive theory and reciprocal deterministic views of human behavior (Berger 2008). Using this conceptualization, individuals are characterized as active participants in their lives, *human agents*, that consciously operate, consider alternatives, and deliberately act for choice consequent effects (Berger 2008). Human agency, in this sense, is seen as the unique ability for humans to exert control and proactively engage within their environment, allowing for greater degree of personal control over select behaviors, situational outcomes, and life course (Bandura 1992). Theoretically, Bandura (1992) proposed that the presence of human control over their



behavior does not necessarily guarantee the effective utilization of such control. Indeed, an individual's capacity to control life events is viewed as governed by yet another control mechanism: the individual's *belief* in their abilities as an effective agent in their environment, namely, their sense of *Self Efficacy* (Berger, 2008).

Operationally, human self efficacy influences behavior through a variety of personal and vicarious experiences as individuals learn by observing the associated consequences of select actions, anticipating future scenarios, visualizing success or failure of future scenarios, internally conducting and rehearsing behaviors for future action, self-reflecting, organizing, and directing behavior (Berger 2008, Bandura 1992). Self efficacy is seen to play a critical role in this process by contributing to self beliefs of effectiveness, personal competencies, causal attributions, and perceived sense of control, thus influencing the degree to which human beings interact and exact control over their environments across their life spans (Bandura 1992).

Experimentally, levels of self efficacy have been demonstrated to account for the greatest amount of variance in performance: performance gains are often noted in individuals with high self efficacy whereas performance decreases are noted in individuals with low perceived self efficacy (Bandura 1992). Increased self efficacy has also been associated with better academic performance (e.g., math performance), higher pain tolerance, increased muscular performance, higher-level goal setting, increased effort, persistence in the face of early rejection, greater emotional control, enhanced immune responses to stress, decreased anxiety arousal, decreased depressive symptoms, increased self worth, and increased motivation for future goal attainment (Bandura 1992).

Overall, when considering these effects, a clear relationship between levels of self efficacy and effective behavior across numerous life domains is evident.

Bandura's (1992) investigations have also indicated that, though inherent levels of self efficacy may exist (i.e., potentially as a by-product of individual personality factors), self-efficacy can be taught, imbued, and effectively created within an individual. Firstly, having a sense of personal control in any given situation is highly dependent on the skills an individual has to cope with the demands of a situation; skills acquisition becomes a crucial step in developing situation-specific efficacies (Bandura 1992). Additionally, an individual must have had a degree of exposure to a target situation to allow for sufficient opportunity to practice and demonstrate efficacy skills (Bandura 1992). Altogether, it is the combination of skills acquisition, situational exposure, and experience with resulting consequences that ultimately creates inner expectations and beliefs of performance, leading to a higher likelihood of successful performance in the future (Bandura 1992).

As a final point of discussion, self efficacy has been popularly viewed as somewhat synonymous to other cognitively-mediated constructs, most prominently, like self esteem. Self esteem, by definition, is a self-belief involving the extent to which a person feels worthy or valued by others (Berger 2008). According to Bandura (1992), though individuals may derive a sense of self worth or value by successful performance, individuals may also derive differential levels of self esteem through inherent qualities or personal attributes (e.g., appearance) or manipulation of standards (i.e., lowering self-standards allows for greater chance of goal attainment) that are functionally independent of successful performance. Though largely viewed as a positive personal quality, high levels of self-esteem do not reliably account for variance in performance attainments or

motivation to perform, and ultimately are theorized to have little bearing on learning or skills development (Bandura 1992). In this way, though self-esteem may be correlated with levels of self efficacy within performance domains, self esteem is seen as neither sufficient nor necessary to affect self efficacy or associated performance outcomes (Berger 2008).

Within the context of visual impairment, a common finding within the scientific literature is that visually impaired individuals frequently present with low levels of self efficacy and self esteem, features that have been heavily implicated in the development of adaptive skills, motivation to perform and practice skills, healthy adjustment to vision loss, and the formation of supportive social networks (Tuttle, 1984). Additionally, as individuals with visual impairment are seen as having decreased access to socially relevant cues (i.e., nonverbal cues) and an increased probability of negative social experiences, they may be especially vulnerable to the development of low self efficacy and a decreased likelihood to engage in future adaptive social behaviors (Tuttle, 1984).

Empirically, Roy and MacKay (2002) investigated the role of self perception and locus of control, constructs similar to notions of self efficacy, in a sample of visually impaired college students. The results of this investigation yielded mean scores on measures of locus of control as insignificantly different from controls; however marked variability was noted and a marginal trend toward negative self perceptions and an external locus of control for visually impaired individuals (Roy & MacKay, 2002). Degree and chronicity of vision loss were also seen as mediating factors for negative self perceptions and external locus of control; individuals with deteriorating and recent adventitious vision loss reported negative self-perceptions and negative references to

having a disability when compared to individuals with congenital or childhood onset vision loss (Roy & MacKay, 2002).

Overall, the results of Roy and MacKay (2002)'s investigation largely indicated that low vision may be associated with qualitatively different, and perhaps more challenging, subjective experiences when compared to blindness. It is important to note that positive experiences relating to vision loss were also reported by participants, particularly in regard to increasing self-development, personal insight, direction in life, and independence (Roy & MacKay, 2002). Lastly, as a discussion point, it was hypothesized that the tendency toward external locus of control may be more influenced by secondary factors associated with vision impairment, largely discouraging personal experiences relating to vision loss and perhaps socioeconomic status, rather than a direct result from vision loss itself (Roy & MacKay, 2002).

*Self Determination*, a concept similar to self efficacy, is also cited in the literature as associated with a person's sense of self agency and, consequently, the degree to which they engage and actively attempt to exact change in their lives. In this view, self-determination is conceptualized as a consequence of behavioral experiences: individuals that are provided the opportunity to engage in self-determined behaviors (e.g., decision-making, problem solving, self-initiative), are more likely to present as self-determined and engage in active behaviors in the future (Robinson & Lieberman, 2004).

Within the context of visual impairment, self-determination is seen as a common target within empirical and treatment settings due to its significant implications on self empowerment, self-advocacy behaviors, and knowledge and application of disability rights, all of which have been viewed as important cognitive and behavioral features that

can contribute to increased healthy personal adjustment to vision loss (Ward, 1996). Furthermore, visually impaired individuals are often subject to limiting environmental contingencies that prevent the practice and development of self-determined behaviors. In an empirical investigation testing the relationship between self-determination opportunities and development of overall self-determination, Robinson and Lieberman (2004) demonstrated a negative relationship between degree of vision loss and provision of self-determination opportunities within life domains of school and health care, independent of gender or age. In light of these results, the authors concluded that skills training models need to include self-determination education and ample opportunities to practice self-determination skills to bolster treatment gains (Robinson & Lieberman, 2004).

Lastly, similar to notions of self-efficacy, self-determination, and locus of control, an individual's sense of self esteem can also be negatively impacted by the experience of visual impairment (Tuttle, 1984; Carroll, 1961). In a case sample of three children with cerebral visual impairment (i.e., visual impairment resulting from brain lesions, periventricular white matter damage, or other organic brain damage), measures of self-reported self esteem were highly variable though near normal limits of a comparative peer sample (Ek, Fellenius & Jacobson, 2003). Of the items included in the self-esteem measure, feelings of inadequacy were most elevated on the protocol from the lowest scoring participant (Ek, Fellenius & Jacobson, 2003). Though issues of generalizability may be raised with any conclusions drawn from single case research, these results nevertheless highlight the notion that low self esteem is evident within visually impaired individuals, yet not ubiquitous, and often result from a number of factors (e.g., co-

occurring illnesses or disabilities, levels of personal adjustment and adaptive proficiencies, and degree of social networking and support) (Tuttle, 1984; Carroll, 1961).

In summary, theories of human agency largely propose that self-beliefs of effectiveness, personal competencies, causal attributions, and perceived sense of control, influence the degree to which human beings interact and exact control over their environments across their life spans. Overall, a human agency conceptualization of behavior is appropriate when considering essential features of educational and rehabilitative programming paradigms aimed toward increasing skill use and successful performance of its participants.

#### Proposal: An Experiential Model of Social Skills Training

Among the currently available social skills training programs for visually impaired youth, a number of downfalls are evident that would suggest further research and development is needed to improve education and training methods. Specifically, though numerous social skills training modules are commercially available for individual and group use, to date, specifically-tailored social skills curricula for the visually impaired are relatively few in number, highly specific to individual private or state-based rehabilitation programs, and are subject to inconsistent empirical review. Considering that the majority of social skills, particularly aspects of social communication, are largely nonverbal, visually-mediated, and performance-based, conventional (i.e., verbally-mediated) approaches to training may not be sufficient to instill select social skills competencies in visually impaired individuals.

Additionally, when taking into account preliminary findings of significant social skills acquisition in association with experiential group training settings (e.g., drama,

role-play, and motor-based social training) across multiple age groups, development of future social skills curricula may benefit from incorporating hands-on, experiential, and practice-based methods to aid in short term and long term skills acquisitions. For example, a potential explanation of the lack of significant results yielded by Kim (2003)'s assertiveness training program (i.e., ATCAVI) was the relatively little emphasis and follow-through with experiential educational and training methods included in the proposed ATCAVI protocol. Specifically, due to situational constraints, the assigned role plays and homework constituted a limited portion of the overall program in addition to yielding variable and minimal participation and follow-through (Kim, 2003). A potential reason for the insignificant effects was that a large portion of the training protocol appears to have been largely discussion-based, with relatively less emphasis on situational practice, a component viewed by this investigator as critical for the development of socially-skillful behavior, assertiveness, and associated self-efficacy and self-determination. As such, the focus of the current investigation included the development of an experiential nonverbal social skills training curriculum, specifically designed to be implemented in a short-term vision rehabilitation context, in order to maximize social skills acquisition in visually impaired youth.

#### Clinical Relevance

Given the literature citing the need for continued research and development of social skills training systems for youth with visual impairments, the clinically relevant implications of the current investigation are numerous, particularly due to its emphasis on novel program development and therapeutic outcomes assessment. Firstly, this investigation is the first known attempt at the empirical development of a nonverbal

social skills curriculum that is wholly accessible to visually impaired youth, regardless of the degree of their visual impairment. As discussed above, currently-available programs and educational materials for social skills training generally include components of discussion and visually-based activities (e.g., looking at photos of faces, interpreting others' body language), methods that are likely of minimal value for individuals with total vision loss. Alternatively, the proposed curriculum focused upon nonverbal social skills that are, theoretically, most inaccessible to visually impaired students (e.g., hand gestures and body language) to allow for greater exposure to such skills training that would otherwise be limited in their respective local environments.

Furthermore, in addition to allowing for maximum accessibility for visually impaired students, the proposed curricula was also developed and modeled after traditional psychological theories of self efficacy, as described above, to maximize the potential for intervention-based gains. In sum, as self efficacy has been demonstrated to improve following successful experiences with a given task and thereby increase the likelihood of future attempts of task involvement, active demonstration, participation, and reinforcement of demonstrated skills were incorporated to capitalize on the gains and generalization of nonverbal social skills targeted within the curriculum.

A second benefit of the current investigation is its contribution to the relatively limited literature involving the outcomes assessment of social skills training programs for visually impaired youth. Consistent with scientist-practitioner standards for psychological training and practice, outcomes assessment of interventions, particularly those that are regularly implemented within established clinical or educational programs, is essential for integrating scientific knowledge into clinical practice while maintaining the integrity



of clinical and educational service delivery (Baker & Benjamin, 2000; Lowman, 2012; Overholser, 2010). Overall, when considering the demonstrated need for social skills training for individuals with visual impairment and the routine delivery of such services during vision rehabilitation (Sacks & Kekelis, 1992; Sacks & Wolffe, 2006), effectiveness assessment is particularly warranted to assure that such standards remain upheld.

Another benefit of this investigation includes the structure and versatility incorporated within its proposed nonverbal social skills curriculum. In the case of short-term rehabilitative programming for youth with visual impairments, a number of challenges to routine social skills training are present, including the diversity of age and functional vision status of attending students coupled with repeated attendance in such programs, often over the course of years (Sacks & Wolffe, 2006). Given the variety inherent within this rehabilitative setting, the proposed social skills program was designed to offer a structured yet flexible curriculum to allow for repeated exposure to core nonverbal social skills while providing latitude for clinical judgment and instructor creativity to modify service delivery as needed to fit the needs of participating students.

Lastly, an auxiliary benefit of this investigation includes its systematic collection of social skills assessment data of visually impaired youth. To date, no known pool of normative data has been collected or consolidated to allow for clinically sound interpretations of social skills assessment results of youth with visual impairments. Consistent with criticisms of the standardization data for other widely-implemented assessment measures, the under-representation of populations (e.g., race/ethnicity, disability) in the provided normative data for a given measure severely limits the type of

conclusions one may draw from the results (Heaton, Ryan, & Grant, 2009). Though not the primary focus of the current investigation, as its procedures included a state-wide sampling of social skills data for a sample of visually impaired youth yielded from a pre-standardized and validated social skills inventory (i.e., Social Skills Rating Scales), the data gathered may provide an initial pool of data that may be applied to future interpretations of the SSRS measure when assessing the social skills of visually impaired youth.

## CHAPTER II

### HYPOTHESES

By and large, it was hypothesized that visually impaired youth who participated in the proposed nonverbal social skills program will evidence significant gains in observed nonverbal social skills when compared to controls. To this effect, three major hypotheses were proposed:

- 1) *Pre-Intervention*: It was expected that students who participated in the proposed social skills curriculum would demonstrate significantly less socially skillful behavior than non-visually impaired peers, as defined by pre-existing normative estimates of standardized social skills measures (i.e., Social Skills Rating Scales).
- 2) *Intra-Intervention and Short-delay Post-Intervention*: Notable improvement in the students' observed general and nonverbal social skills, was expected to result immediately after participating in the nonverbal social skills training curriculum.
- 3) *Long-delay Post-Intervention*: Social skills gains were expected to drop slightly following completion of the social skills program and, due to the stable nature of skills acquisition, remain above original baseline levels.

## CHAPTER III

### METHOD

#### Participants

Seventeen visually impaired youth (10 females, 7 males), aged 6 to 18, participated in at least one short-term programming session between January 2012 and May 2012 at the North Dakota School for the Blind (NDVS/SB) and participated in the modified social skills curriculum. Additionally, parents or guardians of five visually impaired youth who did not participate in short-term programming submitted social skills ratings on at least one occasion during the investigation. All participants were recruited to participate in the current investigation based upon previous and expected attendance at NDVS/SB programming sessions; no external recruitment process was conducted. Parents of participating students were contacted by mail, informed of the general rationale of the investigation (i.e., outcomes assessment of NDVS/SB programming), and invited to participate. A gift certificate in the amount of \$20 per family was offered for participation in the study.

#### Measures

##### *Demographics and Personal Variables*

The parents of the attending students completed a demographic survey that contained questions regarding basic personal information including age, sex, grade level, and general academic functioning (i.e., functioning at grade level). Additional questions

were also included that queried the student's visual diagnosis, duration of visual impairment, and degree of visual impairment (i.e., low vision, legally blind).

### *Social Skills Measures*

*Social Skills Rating System.* The Social Skills Rating System (SSRS) is a norm-referenced social competencies scale developed by Gresham and Elliott (1990) to allow for general social skills assessment and associated intervention guidance to increase adaptive social behaviors in children. The SSRS allows for assessment of social skills in pre-school, elementary, and secondary-aged children by 3<sup>rd</sup> party (i.e., Teacher and Parent Forms) and child self-report formats. The Parent Form, in particular, targets social skills across two distinct indices: the Social Skills Total Scale and the Problem Behaviors Scale. Specifically, the Social Skills Total Scale comprises of items associated with social cooperation, empathy, assertion, self-control, and responsibility. The Problem Behaviors Scale, on the other hand, comprises of items indicative of problematic externalized, internalized, and hyperactive behaviors (Gresham & Elliott, 1990). For the purposes of this investigation, the Parent Form was used and administered to parents or guardians of participating students.

In terms of scoring, parents or guardians of each student were asked to rate each item by its frequency on a scale of 0 to 2 (i.e., 0 = Never, 1 = Sometimes, and 2 = Very Often) and importance on a scale of 0 to 2 (i.e., 0 = Not Important, 1 = Important, and 2 = Critical). Of note, the "Importance" ratings were originally included in the SSRS protocol by Greshman and Elliot (1990) for the purposes of treatment planning (i.e., to isolate potential areas for future clinical interventions), based on social skills or problem behaviors rated as most important by parents and teachers for a given student. As the

current investigation did not utilize such ratings for additional treatment planning or to guide clinical intervention, the “Importance” ratings were not included in the final analysis. Upon full completion of the measure, scores were summed into indices of social skills as detailed above. Per administrative guidelines, SSRS protocols with more than 3 omitted items were deemed invalid and were not included in the final analysis (Gresham & Elliott, 1990).

The SSRS has been standardized across a normative population in excess of 4,000 participants, provides differential normative estimates across gender and disability profiles, and includes discrete software packaging options designed to assist in efficacy assessment of social programming or behavior modification groups (Pearsonassessments.com). The SSRS inventory has demonstrated good reliability, with coefficient alpha reliabilities ranging from 0.85 to 0.90 (Social Skills Total Scale) and ranging from 0.81 to 0.87 (Problem Behaviors Total Scale) for the Parent Forms: Elementary and Secondary Level versions (Gresham & Elliott, 1990). Initial investigations of this measure also indicate that sex of the participants did not appear to influence internal consistency estimates (Gresham & Elliott, 1990).

Test-retest reliability for this measure is also demonstrably good, with reliability coefficients ranging from 0.65 (Problem Behaviors) to 0.67 (Total Scale) of the Parent Form. Additionally, further analysis indicated a general absence of developmental trends in the social skill ratings, as measured by the SSRS; students in the normative sample achieved generally consistent raw score means, indicating the presence of a negligible relationship between age and social skills ratings (Gresham & Elliott, 1990).

*Social Skills Assessment Tool for Children with Visual Impairments.* The Social Skills Assessment Tool for Children with Visual Impairments (SSAT-VI) is a checklist of social behaviors relevant to children with visual impairment and has been proposed for use in educational settings to track changes in social skillfulness over time (McCallum & Sacks, 1994; Wolffe & Sacks, 2000; Sacks & Wolffe, 2006). The SSAT-VI contains 47 specific socially-relevant behaviors across domains of Body Language, Communication Skills, Cooperative Skills, Interpersonal Interactions, Sustaining Relationships, Self-Identity, Interpreting Social Situations, Performance of Social Skills, and Self-Evaluation (McCallum & Sacks, 1994). Each of the 47 social behaviors is then rated in terms of quality performance on a scale of 1 to 6 (i.e., 1 = absent; 2 = poor; 3 = fair; 4 = adequate; 5 = good; 6 = excellent).

In terms of scoring, responses on the SSAT-VI were summed into an index (as detailed above) and a single composite score for repeated analysis. Overall, the SSAT-VI was developed in an effort to create a brief instrument that would allow for repeated qualitative observations of social skill competencies of children of visual impairments by parents, teachers, and caregivers (Sacks & Wolfe, 2006). Though no normative data currently exists for this measure, the inclusion of the SSAT-VI in the current assessment battery will allow for ipsative comparisons of each participating child's social skills across assessment intervals.

*Modified Nonverbal Social Skills Checklist.* Lastly, as no standalone measure of nonverbal social skills was available for review or utilization during the current investigation, a modified 3<sup>rd</sup>-party checklist was created and administered to measure ipsative changes in the students' nonverbal social skills (e.g., gestures, posture,

paralinguistic behavior). Items included in this measure were taken from assessment checklists from the Texas School for the Blind *Independent Living* curriculum (Loumiet & Levack, 1991) and included such items as “Uses tone of voice that is appropriate to the setting,” and “Uses an upright body posture when in more formal situations.” Additionally, other non-target items were included in the measure as a means of reducing potential demand characteristics of responding (e.g., “Utilizes adaptive technology when working on schoolwork”) and were not included in the final analysis. See Appendix E for examples of items in this measure.

Three versions of this measure were created and modeled after the developmental groupings presented by the *Independent Living* curriculum and were comprised of nonverbal social skill items considered developmentally appropriate for students, based upon age groupings (e.g., 4-7 years old, 8-11 years old, and 12-15 years old). As such: Version 1 included developmentally appropriate items for students aged 4-7 years, Version 2 included developmentally appropriate items for students aged 8-11 years, and Version 3 included developmentally appropriate items for 12-15 year old visually impaired students.

In terms of scoring, the modified nonverbal social skills checklist was modeled after the SSRS scoring protocol: 3<sup>rd</sup> party raters were asked to rate each item by its frequency on a scale of 0 to 2 (i.e., 0 = Never, 1 = Sometimes, and 2 = Very Often). Upon full completion of the measure, 3<sup>rd</sup>-party frequency ratings of the nonverbal social skills items were summed and divided by the maximum score possible for each version, yielding a final percentage score. This procedure was conducted to allow for equal



comparison of scores across age groups, as each version contained a different proportion of nonverbal social skill items to non-target items.

In summary, this checklist was created to supplement the measures utilized within the current investigation and, consequently, no normative data exist for this measure. Similarly, the results obtained from this checklist will simply allow for ipsative comparisons of each participating child's nonverbal social skills across the assessment intervals.

### Procedure

#### *Pre-Intervention: Informed Consent and Pre-Intervention Assessment of Social Skills*

As a general social skills class is considered to be part of routine educational practice at NDVS/SB, all students who attended programming automatically attended the modified social skills group. With regard to the outcomes assessment portion of the investigation (i.e., completion of assessment measures), parent or guardian participation was entirely voluntary. As the objectives of the current investigation included outcomes assessment of routine educational procedures, no formal informed consent process was completed. Alternatively, parents were given basic informative materials and an invitation to participate in the outcomes assessment portion of the investigation, irrespective of their anticipated programming attendance date, and prior to their participation in the modified social skills group. To control for potential demand characteristics or biased responding, parents were informed that the assessment protocol they were consenting to participate in was a comprehensive outcomes project for the NDVS/SB, with no mention made of its relevance to the social skills group.

Upon returning materials assenting to participate in the current investigation, the parents or guardians of each child were then asked to complete the SSRS, SSAT-VI, and MNVSSC forms to establish baseline measures of social skills prior to the commencement of 2012 programming session and participation in the modified nonverbal social skills program. The schedule of baseline measurements was designed to follow traditional ABAB guidelines (Riley-Tillman & Burns 2009); a minimum of three baseline measurements (i.e., once per week for three weeks) were administered to establish a stable behavioral pattern of social competencies prior to the student's attendance in the social skills curriculum. Parents were sent paper copies of the assessment materials by mail and given return envelopes with postage to facilitate consistent and prompt responding.

*Intervention: Administration of a Nonverbal Social Skills Training Curriculum*

Participating students arrived at the NDVS/SB facility on the Sunday evening prior to the commencement of the short term programming week. During the programming week, students participated in a structured expanded core curriculum (ECC), scheduled 8:00 am to 4:30 pm, until their departure on the following Friday afternoon. As a component of the structured ECC programming schedule, each of the students participated in a total of four social skills groups, scheduled for 60 minutes per group. Each social skills group consisted of structured discussion, demonstration, and integrated practice of broad "Focus Skills" that included discrete lessons of body language (e.g., posture, body orientation, placement of legs, feet, and hands), facial expressions (e.g., communicative smiles, directional gaze, eye contact), hand gestures (e.g., waving "hello," directional pointing, number emblems), and paralinguistic

behaviors (e.g., speech speed, tone, conversational turn-taking, and indicating interest). Lastly, each daily lesson was structured according to a set curriculum which was strictly followed for each social skills group session (see Appendix for curriculum details).

*Intervention: Measures of Social Skills*

After attending the first social skills lesson, the students were rated on their observable social skills by randomly assigned instructors at NDVS/SB using the SSAT-VI and modified nonverbal social skills assessment checklist. A total of 3 measurements were administered to instructors to rate each student to assess intra-intervention changes throughout the programming week. Assessment protocols were then collected from each of the instructors following the completion of the programming week for scoring and analysis.

*Post-Intervention Measures of Social Skills*

Within one week of the completion of programming attendance, the parents or guardians of each student were mailed paper copies of the SSRS, SSAT-VI, and the modified nonverbal social skills checklist inventories to provide post-assessment measures of the student's observable social skills. At one month following participation in short-term programming, parents or guardians of each students were mailed paper copies of the SSRS, SSAT-VI, and the modified nonverbal social skills checklist inventories to provide follow-up measures of the students' observed social skills. Lastly, at the end of the programming season, parents and guardians of all students, regardless of participation status, were mailed a final assessment protocol, as above, for a final post-test measure of social skills.

## CHAPTER IV

### RESULTS

#### Demographics and Personal Information

Parents (or guardians) of twenty two visually impaired youth (14 females and 8 males), aged 6 to 18 (average age = 11.67 years), submitted social skills ratings in the current investigation. Of these students, sixteen students (10 females and 6 males) attended one programming session, one student (male) attended three programming sessions, and five students (4 females, 1 male) attended zero programming sessions throughout the duration of the investigation. Of the data provided by parent responders, 8 students were enrolled and attending elementary-level grades (i.e., Kindergarten - 6<sup>th</sup> grade), and 7 students were enrolled in secondary-level grades (i.e., 7<sup>th</sup> – 12<sup>th</sup> grade), with an average grade level of 6.4. The ethnic/racial backgrounds of the students were reported as follows: Caucasian (n = 19, 86%), Hispanic/Latino (n = 2, 9%), Native American (n = 1, 4%).

With regard to the degree and etiology of the students' visual impairments, parents of eighteen students provided information pertaining to the student's vision status and diagnosis: seven (38.9%) of students were diagnosed with low vision and eleven (61.1%) of students were diagnosed with legal blindness. Parents of eleven students provided information regarding the duration of the student's visual impairment: seven students (63.6%) were reported to be visually impaired from birth and four students

(36.4%) acquired visual impairment during their childhood years. Of the students with acquired vision loss, the average age of onset (or diagnosis) of visual impairment was seven years old. With regard to etiology of visual impairment, parents of seven students provided information regarding the medical diagnosis associated with the student's visual impairment. The diagnoses included the following: rod-cone dystrophy (2 students), optic nerve hypoplasia, Leiber's congenital amaurosis, retinopathy of prematurity, Stargatt's Disease, and traumatic brain injury.

### Statistical Analysis: Descriptive Statistics

#### *Pre-Intervention*

*SSRS.* Of the twenty two student participants, parents of seven students completed and returned, by mail, a baseline measure of the SSRS. Results of this measure yielded an average standard Total Scale score of 82.00 ( $n = 7$ ,  $SD = 17.11$ , Minimum score = 62.00, Maximum score = 104.00) across all participants. Interpretively, this standardized score is considered below average when compared to normative estimates provided by the SSRS standardization sample. Baseline ratings of problematic or disruptive social behaviors, as measured by the SSRS Problem Behavior scale, yielded an average score of 104.60 ( $n = 7$ ,  $SD = 13.92$ , Minimum score = 90.00, Maximum score = 126.00). Interpretively, this standardized score is within the average range, compared to normative estimates provided by the SSRS standardization sample..

*SSAT-VI:* Parents of eight student participants completed and returned the pre-intervention measure of the SSAT-VI checklist. Of note, of the returned SSAT-VI protocols, four (50%) contained at least three omitted items throughout the entire measure. As no administrative guidelines for this measure were available for review at

the time of this investigation, protocols with three or more omitted items were deemed incomplete, per SSRS administrative guidelines as detailed above. Alternatively, all SSAT-VI protocols were returned with completed responses to all Body Language index items. As the primary focus of this investigation involved an examination of the students' nonverbal social skills, the Body Language index of the SSAT-VI was then utilized as an additional measure of nonverbal social skills instead of the total SSAT-VI score. Similar to the scoring method of the modified nonverbal social skills checklist, items of the SSAT-VI Body Language index were summed and then divided by the maximum possible score to derive a final percentage value for comparison. This analysis procedure was then completed for all following SSAT-VI analyses in this investigation. Following this adjusted analysis, scores on the Body Language index of this measure indicate that the students achieved an average of 54% of the total body language objectives ( $n = 8$ ,  $\bar{X} = 0.54$ ,  $SD = 0.19$ , Minimum score = 0.32, Maximum score = 0.76).

*Modified nonverbal social skills checklist:* Parents of seven student participants completed and returned the pre-intervention measure for the modified nonverbal skills checklist. Examination of the completed protocols indicated that the students achieved an average of 48% of the total nonverbal social skills objectives ( $n = 7$ ,  $\bar{X} = 0.48$ ,  $SD = 0.19$ , Minimum score = 0.25, Maximum score = 0.76). See Table 1 (following page) for details.

Table 1. Descriptive Statistics of Pre-Intervention Social Skills Measures

	<b>Pre-Intervention</b>				
	<b>N</b>	$\bar{X}$	<b>SD</b>	<b>Minimum</b>	<b>Maximum</b>
<b>SSRS Total Scale</b>	7	82.00	17.11	62.00	104.00
<b>SSRS Problem Behavior Scale</b>	7	104.60	13.92	90.00	126.00
<b>SSAT-VI*</b>	8	0.54	0.19	0.32	0.76
<b>Modified nonverbal social skills checklist*</b>	7	0.48	0.19	0.25	0.83

\*SSAT-VI and Modified nonverbal social skills checklist percentage values are displayed in decimal form.

*Short-delay Post-Intervention*

*SSRS.* Parents of eight students completed the SSRS form within 1 month following the completion of social skills program, and yielded an average standard Total Scale score of 99.19 (n = 8, SD = 24.25, Minimum score = 62.00, Maximum score = 130.00). Interpretively, this score falls within the average range when compared to normative estimates provided by the SSRS standardization sample. Ratings of problematic behaviors yielded an average of 102.60 (n = 5, SD = 19.42, Minimum score = 87.00, Maximum score = 133.00). Interpretively, this score is within the average range, compared to the normative estimates provided by the SSRS standardization sample. See Table 2 (below) for these details.

*SSAT-VI.* Parents of seventeen students completed the SSAT-VI form. Analysis of the completed forms indicated that the students were rated to meet 60% of the total body language objectives of this measure (n = 17,  $\bar{X}$  = 0.60, SD = 0.16, Minimum score = 0.24, Maximum score = 0.82) following a short delay after attending programming. See Table 2 (next page) for these details.

*Modified nonverbal social skills checklist.* Parents of fourteen students completed the modified nonverbal social skills checklist. Analysis of these results indicated that the students met 63% of the total nonverbal social skills behavioral objectives included in this measure (n = 14,  $\bar{X}$  = 0.63, SD = 0.12, Minimum score = 0.46, Maximum score = 0.92). See Table 2 (below) for details.

Table 2. Descriptive Statistics of Short-Delay Post-Intervention Social Skills Measures

	<b>Short-Delay Post-Intervention</b>				
	<b>N</b>	$\bar{X}$	<b>SD</b>	<b>Minimum</b>	<b>Maximum</b>
<b>SSRS Total Scale</b>	8	99.19	24.25	62.00	130.00
<b>SSRS Problem Behavior Scale</b>	5	102.60	19.42	87.00	133.00
<b>SSAT-VI*</b>	17	0.60	0.16	0.24	0.82
<b>Modified nonverbal social skills checklist*</b>	14	0.63	0.12	0.46	0.92

\*SSAT-VI and Modified nonverbal social skills checklist percentage values are displayed in decimal form.

### *Long-Delay Post-Intervention*

**SSRS.** Parents of six students completed the SSRS form following a long-delay (i.e., 2 or more months following participation in short-term programming) upon the completion of the programming year. Analysis of these results yielded an average score of 91.83 (n = 6, SD = 15.98, Minimum score = 68.00, Maximum score = 114.00). Interpretively, this score is within the average range compared to the normative estimates provided by the SSRS standardization sample. Ratings of problematic behaviors yielded an average of 105.50 (n = 5, SD = 10.31, Minimum score = 97.50, Maximum score =



123.00). Interpretively, this score is within the average range, compared to the normative estimates provided by the SSRS standardization sample.

*SSAT-VI.* Parents of six students completed the SSAT-VI checklist. The results of the parents' responses indicate that the students were rated as meeting an average of 49% of the body language behavioral objectives contained in this measure ( $n = 6, \bar{X} = 0.49, SD = 0.09, \text{Minimum score} = 0.36, \text{Maximum score} = 0.64$ ).

*Modified nonverbal social skills checklist.* Parents of four students completed the modified nonverbal social skills checklist. The results indicate that the students were rated as meeting an average of 39% of the nonverbal social skills behavioral objectives contained in this measure ( $n = 4, \bar{X} = 0.39, SD = 0.09, \text{Minimum score} = 0.29, \text{Maximum score} = 0.46$ ).

Table 3. Descriptive Statistics of Long-Delay Post-Intervention Social Skills Measures

	<b>Long-Delay Post-Intervention</b>				
	<b>N</b>	<b><math>\bar{X}</math></b>	<b>SD</b>	<b>Minimum</b>	<b>Maximum</b>
<b>SSRS Total Scale</b>	6	91.83	15.98	68.00	114.00
<b>SSRS Problem Behavior Scale</b>	5	105.50	10.31	97.50	123.00
<b>SSAT-VI*</b>	6	0.49	.09	0.36	0.64
<b>Modified nonverbal social skills checklist*</b>	4	0.39	.09	0.29	0.46

\*SSAT-VI and Modified nonverbal social skills checklist percentage values are displayed in decimal form.

### Statistical Analysis: Nonparametric Repeated Measures

As the current sample size was not sufficiently large to warrant the use of parametric tests (total  $N = 22$ , modal  $n$  per assessment interval = 7), non-parametric methods were conducted to determine if the students' social skills ratings significantly differed across pre-intervention, short-delay post-intervention, and long-delay post-intervention assessment intervals. As this investigation employed a repeated measures research design, a non-parametric equivalent of the repeated measures ANOVA, the Friedman's F procedure, was conducted to examine the difference among means across assessment intervals (Pett, 1997; Field, 2009). Overall, results of Friedman's ANOVA analyses on SSRS, SSAT-VI, and the modified nonverbal social skills checklist data yielded statistically insignificant differences among means across all assessment intervals.

Specifically, on a global measure of general social skills, as indicated by scores on the SSRS Total Scale index, the students' scores did not significantly differ across the assessment intervals  $\chi^2(2) = 0.947$ ,  $p > 0.05$ . Similarly, on measures of problematic or disruptive social behaviors, as indicated by scores on the SSRS Problem Behaviors index, the students' scores also did not significantly differ across the assessment intervals  $\chi^2(2) = 0.316$ ,  $p > 0.05$ . Additionally, on measures of body language and demonstrated nonverbal social skills, the students' scores did not significantly differ across assessment intervals, as measured by the body language index of the SSAT-VI,  $\chi^2(2) = 0.50$ ,  $p > 0.05$ , and the modified nonverbal social skills checklist,  $\chi^2(2) = 4.91$ ,  $p > 0.05$ .

Of note, despite not meeting a priori criteria for statistical significance at the  $p < 0.05$  level, a trend was evident throughout repeated administrations of the modified

nonverbal social skills checklist. This trend indicated that the observed nonverbal social skills behaviors tended to increase within a short-delay following participation in programming ( $\bar{X} = 0.55$ , Rank = 3.00,  $p = 0.08$ ), as compared to ratings during pre-intervention ( $\bar{X} = 0.39$ , Rank = 1.50) and at a long-delay post-intervention ( $\bar{X} = 0.36$ , Rank = 1.50).

### Visual Analysis of Nonverbal Social Skills Ratings

Due to low levels of 3<sup>rd</sup> party responding, a limited visual analysis of the students' observed nonverbal social skills was conducted. Of the seventeen students that participated in short-term programming, 3<sup>rd</sup> party observations of four students' nonverbal social skills, as measured by the modified nonverbal social skills checklist, yielded sufficient data to visually analyze possible trends in social skills behaviors at pre-intervention, intra-intervention, and post-intervention assessment intervals.

According to conventional standards of visual analysis of single case data, these four students' data were reviewed for changes in mean and level of observed nonverbal social skills (Riley-Tilman & Burns, 2009; Kazdin, 2011). Of note, latency of change, change in trend, and change in variability are also considered conventional methods to utilize for visual analysis of single case data (Riley-Tilman & Burns, 2009; Kazdin, 2011); however, due to significant and inconsistent latencies across assessment intervals combined with the low number of assessments that were completed and returned for each student, these criteria were deemed inappropriate to use for the current investigation. See Figures 1 and 2 (below) for a graphical representation of cumulative data from Students #1 - #4. Portions of the figures marked with a shaded box indicate data points collected during attendance at short-term programming.

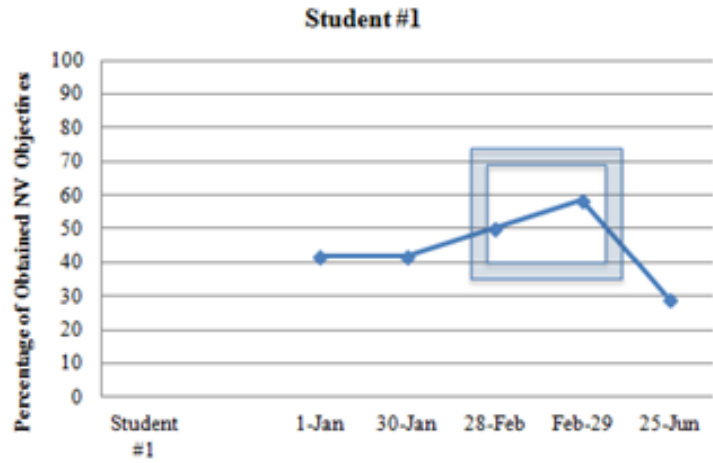


Figure 1. Modified Nonverbal Social Skills Checklist Data: Student #1.

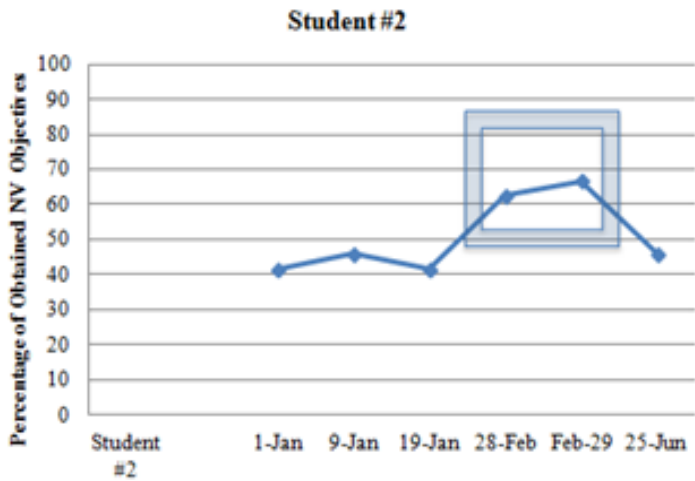


Figure 2. Modified Nonverbal Social Skills Checklist Data: Student #2.

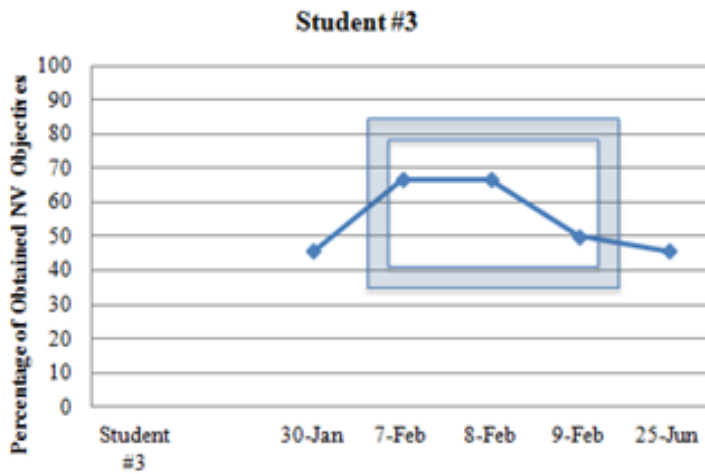


Figure 3. Modified Nonverbal Social Skills Checklist Data: Student #3.

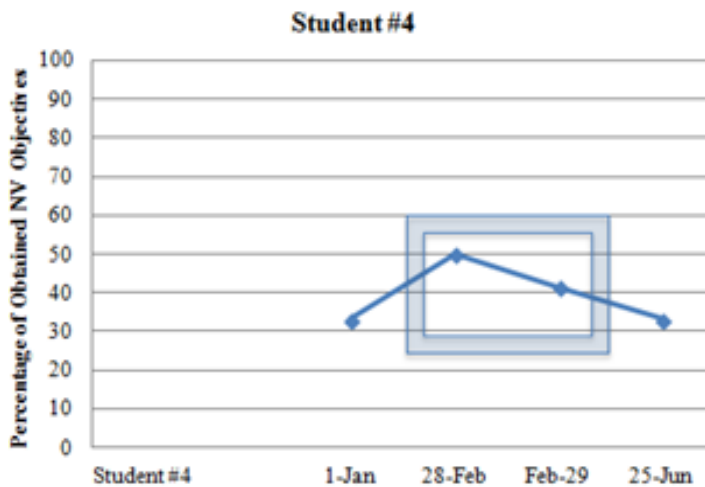


Figure 4. Modified Nonverbal Social Skills Checklist Data: Student #4.

*Change in Mean.* The first visual analysis procedure implemented was examining the variability of the students' mean ratings of nonverbal social skills at the pre-intervention, intervention (i.e., during the programming week), and post-intervention

phases of this investigation. To increase objectivity, standard deviations of each student's data were derived and used as criteria to ipsatively assess for significant changes in means. For purposes of determining the significance of mean variability, an apriori determination criteria for significance was identified: mean changes exceeding one standard deviation from the mean were interpreted as meaningful.

As indicated in Figures 3 and 4 (following page), and Table 4 (following page), each participant evidenced an increase in observed nonverbal social skills across the pre-intervention and intervention intervals, exceeding one standard deviation in all cases. Following the cessation of the intervention phase, a marked decrease in observed nonverbal social skills was noted in excess of one standard deviation for each student. Overall, with the available data provided by 3<sup>rd</sup> party responders, the pattern of means across experimental conditions indicated a trend of increased observed nonverbal social skills during the intervention, followed by a decrease of observed nonverbal social skills at follow-up.

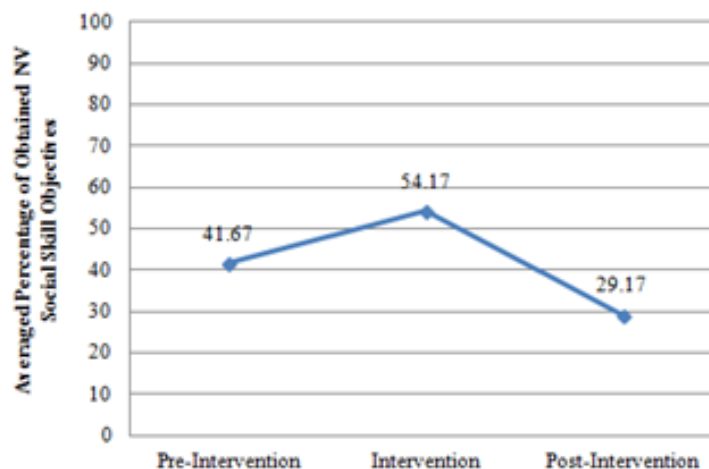


Figure 5. Modified Nonverbal Social Skills Checklist: Mean Changes Across Pre-Intervention, Intervention, and Post-Intervention Intervals: Student #1.

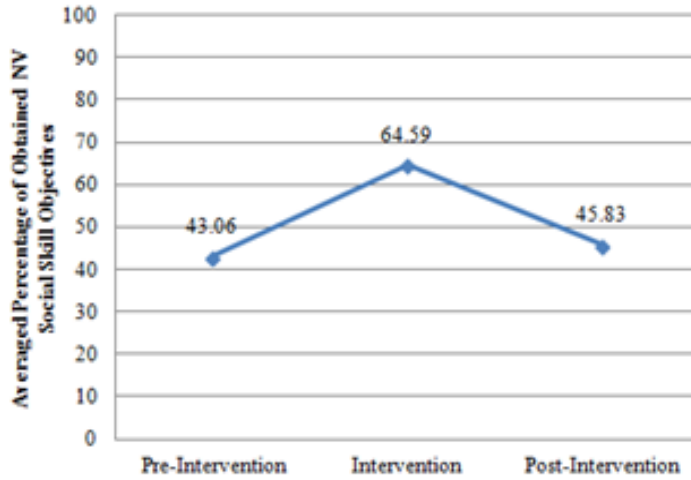


Figure 6. Modified Nonverbal Social Skills Checklist: Mean Changes Across Pre-Intervention, Intervention, and Post-Intervention Intervals: Student #2.



Figure 7. Modified Nonverbal Social Skills Checklist: Mean Changes Across Pre-Intervention, Intervention, and Post-Intervention Intervals: Student #3

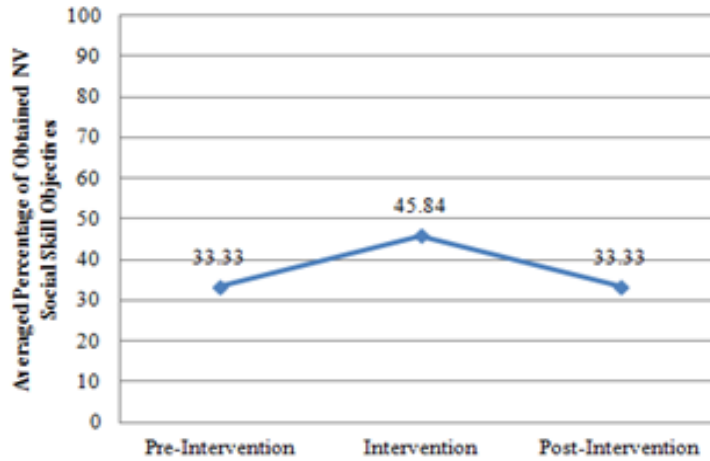


Figure 8. Modified Nonverbal Social Skills Checklist: Mean Changes Across Pre-Intervention, Intervention, and Post-Intervention Intervals: Student #4.

Table 4. Mean Changes Across Pre-Intervention, Intervention, and Post-Intervention Assessment Intervals.

	Mean Changes				
	$\bar{X}$	SD	Pre-Intervention to Intervention	Intervention to Post-Intervention	Pre-Intervention to Post-Intervention
<b>Student #1</b>	44.17%	10.86	12.50%*	-25.00%**	-12.50%*
<b>Student #2</b>	50.70%	11.00	21.53%*	-18.76%*	-2.77%
<b>Student #3</b>	55.0%	10.79	15.28%*	-15.28%*	0%
<b>Student #4</b>	39.58%	7.98	12.51%*	-12.51%*	0%

\* indicates change in excess of 1 (ipsative) standard deviation

\*\* indicates change in excess of 2 (ipsative) standard deviations

*Change in level.* A second visual analysis technique was utilized to determine significant changes in observed nonverbal social skills performance immediately prior to and after the implementation of the Intervention phase (Riley-Tilman & Burns, 2009; Kazdin, 2011). Procedurally, to examine changes in level from pre-intervention to



intervention, the last obtained score during the pre-intervention was compared to the first obtained score during the intervention phase. Similarly, to examine changes in level from intervention to post-intervention, the last obtained score during the intervention phase was then compared to the first obtained score of the post-intervention phase.

As indicated in Table 5, three out of four students evidenced a marked level increase in observed nonverbal social skills, in excess of at least one standard deviation, from pre-intervention to intervention. Greater variability of level changes across students were noted when examining intervention to post-intervention phase data; two out of four students were observed to demonstrate nonverbal social skills during the latter portion of the intervention phase that were commensurate with observations at post-intervention. Alternatively, the remaining two students evidenced a marked decrease of observed nonverbal social skills from intervention to post-intervention, in excess of one standard deviation in both cases.

Table 5. Level Changes Across Pre-Intervention, Intervention, and Post-Intervention Intervals.

	$\bar{X}$	SD	Level Change: Pre-Intervention to Intervention	Level Change: Intervention to Post-Intervention
<b>Student #1</b>	44.17%	10.86	8.33%	-29.16% **
<b>Student #2</b>	50.70%	11.00	20.83%*	-20.84%*
<b>Student #3</b>	55.0%	10.79	20.84%*	-4.17%
<b>Student #4</b>	39.58%	7.98	16.67%**	-8.34%

\* indicates change in excess of 1 (ipsative) standard deviation

\*\* indicates change in excess of 2 (ipsative) standard deviations

*Percentage of Non-Overlapping Data:* As a measure of effect size, conventionally utilized when examining single case designs, an analysis of the percentage of non-overlapping data from pre-intervention to intervention phases was conducted. Procedurally, to determine the percentage of non-overlapping data, the highest pre-intervention phase data point for each student was used as a criterion by which all intervention phase data points were compared. Any instance of an intervention data point equaling or exceeding the pre-intervention criterion (in this case, points that drop *below* the pre-intervention criterion, as higher data points were the hypothesized result of the intervention) were summed and divided by the total number of intervention data points (Riley-Tillman & Burns, 2009). As a general rule, large intervention effect sizes derived by this method are suggested to consist of 80% non-overlapping data or more (Riley-Tillman & Burns, 2009).

As indicated by Figures 5 and 6, and Table 6, all four students achieved a measure of 100% non-overlapping data and suggest the presence of a robust effect size. Of note, this effect size is potentially overestimated due to the relatively low number of total data points obtained across the pre-intervention and intervention phases of the investigation; fewer data points were available to overlap. See figures (next page) for details.

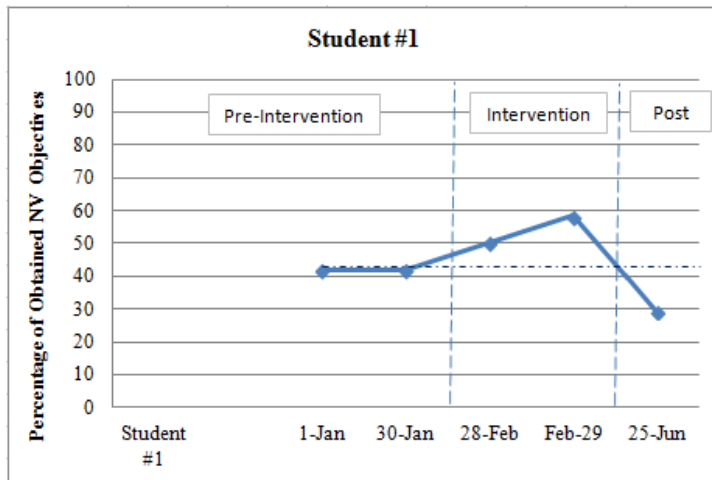


Figure 9. Modified Nonverbal Social Skills Checklist: Percentage of Non-Overlapping Data: Student #1.

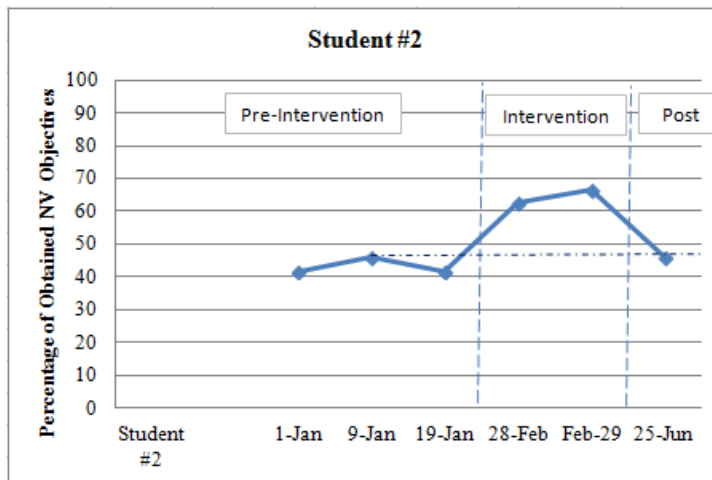


Figure 10. Modified Nonverbal Social Skills Checklist: Percentage of Non-Overlapping Data: Student #2.

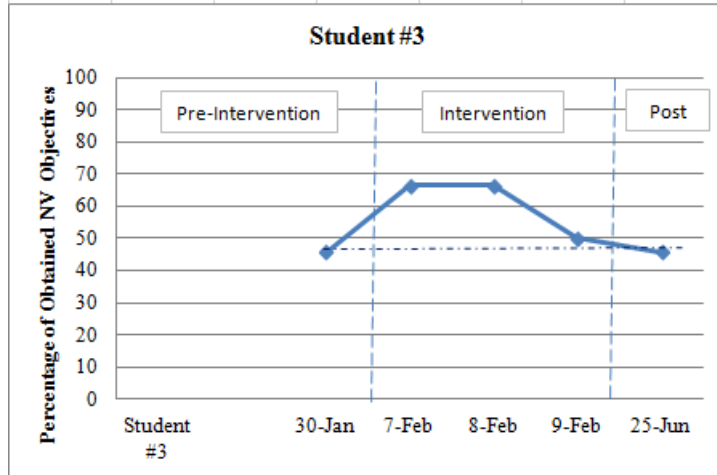


Figure 11. Modified Nonverbal Social Skills Checklist: Percentage of Non-Overlapping Data: Student #3.

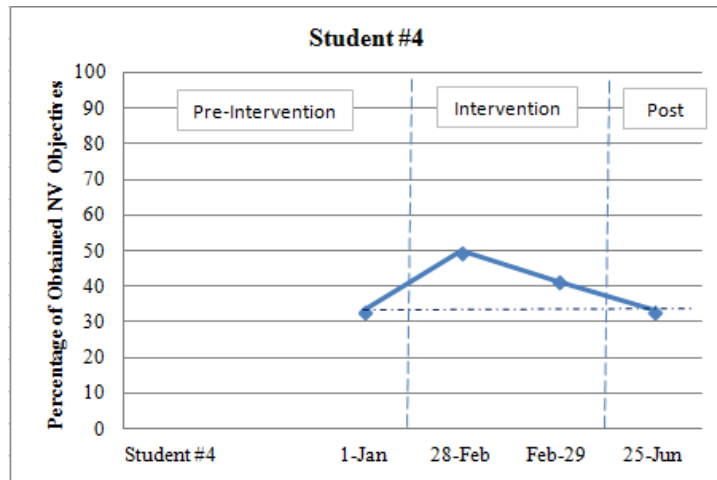


Figure 12. Modified Nonverbal Social Skills Checklist: Percentage of Non-Overlapping Data: Student #4.

Table 6. Percentage of Non-Overlapping Data.

	<b>Pre-Intervention criterion score</b>	<b>Number of overlapping data points in Intervention phase</b>	<b>Total Intervention data points</b>	<b>% Non- overlapping data</b>
<b>Student #1</b>	41.67%	0	2	100%
<b>Student #2</b>	45.83%	0	2	100%
<b>Student #3</b>	45.83%	0	3	100%
<b>Student #4</b>	33.33%	0	2	100%

## CHAPTER V

### DISCUSSION

The purpose of this study was to examine the effectiveness of an experiential nonverbal social skills training program for youth with visual impairments, implemented within a short-term rehabilitative programming context. Methodologically, parents or guardians of visually impaired students attending short term rehabilitative programming at the North Dakota School for the Blind/ Vision Services completed 3<sup>rd</sup> party ratings of observed general and nonverbal social skills at pre, short-delay post-intervention, and long-delay post-intervention intervals. Instructors at the NDVS/SB also completed measures of observed nonverbal social skills for each student during their participation at rehabilitative programming.

The results of this investigation confirmed the initial proposed hypothesis that visually impaired students generally are rated as demonstrating social skills that are below expectations when compared to sighted peers. Indeed, in this study, pre-test mean measures of the participating students' observed social skills were more than a standard deviation below the average of the normative sample, as measured by the Social Skills Rating Scales inventory. This result was consistent with much of the available literature detailing the observed social skills of visually impaired individuals and generally note that visually impaired students typically demonstrate developmentally inappropriate social skills when compared to their sighted peers (Van Hasselt, Hersen, & Kazdin, 1985;

Recchia, 1987; Rettig, 1994; Sharkey & Asamoto, 2000; Eckman & Friesen, 1969; McHugh & Lieberman, 2003). Interpretively, a number of hypotheses have been posited to account for this observation, and largely include the notion that visually impaired youth are deprived access to modeling and vicarious social learning experiences of nonverbal (i.e., visual) behaviors performed by individuals in their relative social networks (Van Hasselt, 1983; Sacks & Wollffe, 2006). Therefore, as a result of limited learning opportunities, individuals with visual impairment are provided minimal to no behavioral shaping experiences to instill knowledge and proficiency in the use and execution of nonverbal social skills (Van Hasselt, 1983; Bremer & Smith, 2004).

This investigation also examined visually impaired students' observed social skills over time and throughout pre-intervention, intervention, and post-intervention phases of the investigation. Additional proposed hypotheses stated that students participating in the nonverbal social skills curriculum would demonstrate significant improvements in general and nonverbal social skills following the intervention. Examination of general and nonverbal social skill performance throughout the investigation yielded an absence of statistically significant changes following participation in the intervention phase of the investigation. This finding runs counter to the hypotheses posed by this investigation; however, it is consistent with the results of other investigations that have examined the effectiveness of social skills training procedures. In sum, few social skills training programs for youth with visual impairments have yielded statistically significant outcomes of social skills gains post-intervention (Kim, 2003; Levin 2012). Additionally, as this study included a relatively low number of participating students whose data were available for statistical analysis, this effect is not

entirely unexpected given the limitations of power and effect size posed by small n samples (Kazdin, 2011; Field 2009; Pett, 1997).

Alternatively, a number of trends were evident in the data, when examined using visual analysis techniques, which suggested that meaningful change in the students' nonverbal social skills behaviors occurred throughout the course of the investigation. Overall, on measures including 3<sup>rd</sup> party observations of nonverbal social skills, behaviors that were specifically targeted in the intervention phase of this investigation, a trend was evident that suggested relative increases in observed nonverbal social skills during the intervention phase of the experiment. A trend was also evident which indicated that the students' nonverbal social skills ratings then declined following the cessation of the intervention and their attendance in short-term vision rehabilitative programming.

Interpretively, though the intended effect of the nonverbal social skills curriculum was to instill nonverbal social skills that persisted beyond the immediate context of a student's attendance in short-term programming, this finding echoes similar effects found within the literature. Sacks and Gaylord-Ross (1989) noted similar short-term gains of general social skills following a teacher-mediated training paradigm whereas long-term gains of social skills was noted when the training paradigm utilized peer-mediation. As the current study primarily consisted of teacher-mediated instruction and yielded somewhat similar results, it may be reasonable to suspect that utilization of peer-mediated teaching paradigms in future nonverbal social skills training efforts might bolster long-term social skills gains. Additionally, other investigators noted positive effects of utilizing peer feedback as a method of increasing direction of eye gaze, a nonverbal behavior targeted within the body language module of this investigation



(Jindal-Snape, 2005). This further emphasizes the importance of maximizing the degree to which peer mediation is incorporated into the social skills training model for youth with visual impairments to maintain gains following the completion of programming.

#### Limitations and Recommended Future Adaptations

A number of theoretical and methodological limitations were present in the current investigation which may inform the interpretation of its results and future research efforts. Firstly, this investigation was conducted within a community-based vision rehabilitation setting and included data from participants already enrolled and participating in rehabilitative services. In this case, all students participating in rehabilitative programming were also scheduled to attend a general social skills group as a function of standard educational and service-delivery practices for vision rehabilitation programs (Lohmeier, 2006). Consequently, as is true with many effectiveness research paradigms, full experimental control was limited and no randomization of participants to treatment conditions was possible, clinically indicated, or implemented within this investigation. As such, this investigation is consistent with a quasi-experimental research design and is thus subject to conventional limitations of such designs, which largely include threats to internal validity and limitations of effect size (Field, 2009; Kazdin, 2003; Kazdin, 2011; Weisz et al., 1995).

Of note, potentially confounding factors to clinically significant change must be taken into account to examine whether the resulting mean changes were an effect of the intervention or some other aspect of the investigation. As all students involved in the investigation participated in the modified nonverbal social skills curriculum, they did so within the context of their participation in short-term rehabilitative programming. As

such, it is possible that other aspects of their participation in programming (e.g., demand characteristics of the rehabilitation school environment, general feedback from rehabilitation instructors, and positive peer influences) may have been influential in encouraging the use of developmentally appropriate social skills and served as an auxiliary intervention beyond the effects of the modified nonverbal social skills curriculum. Unfortunately, to date, no published data were available to review regarding the potential relationship between participation in vision rehabilitation programs and observed changes in social skills.

Overall, given the quasi-experimental nature of this investigation, full experimental control to isolate the intervention effects on the desired dependent variable (i.e., general and nonverbal social skills) was not possible. Of note, though this investigation originally intended to include data from non-participating students as controls, low levels of 3<sup>rd</sup> party responding and the resulting truncated data set prohibited full analysis of between-subjects results. This considered, future research endeavors may wish to account for this limitation by utilizing between-group research designs, potentially including visually impaired student participants who are participating in full short-term rehabilitative programming and those who are not, to better address possible threats to internal validity.

Despite the limitations inherent within quasi-experimental research designs, a number of strategies were employed in this study to reduce threats to internal validity and improve the robustness of its analysis procedures. Accordingly, this investigation included systematic data collection procedures, multiple assessment intervals, and incorporated the use of a standardized assessment measure, methods which have been

determined to improve the quality of inferences made regarding whether change has occurred as a result of an experimental intervention (Kazdin, 2003). Furthermore, though limitations of power and effect size are significant challenges to investigations with relatively small data sets, the repeated measures procedures utilized in this study allowed for a reduction of within-subjects variance and allowed for improvements in the quality of the data and confidence in the conclusions drawn (Kazdin, 2003; Field, 2009).

Another consideration that may color the interpretations of this investigation includes the selection of measures utilized to assess 3<sup>rd</sup> party ratings of social skills. Although well-established as a valid and reliable method to examine the demonstrated social skills of children, to date, no existing normative data were available for review that include an SSRS standardization sample of youth with visual impairments. In this way, the obtained results and their normative interpretations were made within the context of the available standardization sample, i.e., youth *without* visual impairments. Of relevance to this particular study, baseline measures of the participating students' social skills were within the below average range; however, this interpretation is based upon the distribution of results from a sample of sighted youth and may not reflect the distribution (and therefore, the interpretation of scores) of youth with visual impairments. In this way, the interpretations of the obtained results are preliminary and must be further substantiated through replication and future standardization efforts.

Moreover, the results of other measures utilized within this investigation were similarly limited due to the absence of standardization and empirical validation data. Specifically, though the SSAT-VI and the modified nonverbal social skills checklist were

implemented as best means to measure general and nonverbal social skills behaviors for youth with visual impairment, the conclusions drawn from the generated results were limited to ipsative comparisons and may only be used as a general metric of change (in contrast to a unit of actual ability, to be used as a standard of comparison against other students). Despite this limitation, these measures were utilized as the items they contain were specifically generated and recommended as targets for educational, rehabilitative, and clinical intervention for visually impaired youth, measures that have yet to be formally established and appropriately validated (Sacks & Wolffe, 2006). Though beyond the scope of this investigation, future research efforts toward developing, validating, and standardizing measures of social skillfulness (general and nonverbal) for youth with visual impairment may significantly contribute to the field and assist in allowing for more valid and reliable conclusions to be drawn from assessment results within this population.

As mentioned, an additional drawback of this study involves the relatively low number of participants contributing to the data set and its subsequent analysis. Specifically, parents or guardians of seventeen students provided at least one completed assessment protocol during the investigation; however, substantially fewer provided completed protocols across pre-intervention, intervention, and post-intervention assessment intervals. On average, data for seven students were available for analysis at any given phase of the investigation, which significantly limited the type of statistical analysis procedures conducted and allowed for a limited examination of data by single case visual analysis techniques. Although the issue of small  $n$  is relatively common in clinical settings, it poses significant limitations on data analysis procedures and often results in an increased Type II error rate due to low power to detect statistically

significant differences in a given data set (Field, 2009; Kazdin, 2011; Pett, 1997).

Coupled with the tendency for clinical effectiveness research to result in low effect sizes (Weisz et al., 1995), small n compounds the issue and likely contributed to the lack of significance obtained in this investigation.

Of note, regardless of the small n of the current study, the relatively low prevalence of visual impairment, particularly in the geographical location targeted, may preclude future research efforts at obtaining sufficiently large sample sizes to allow for adequate estimates of power and effect sizes. Indeed, according to figures posted by the United States Census Bureau (nd) and the American Foundation for the Blind (2013), approximately 0.16% of North Dakotan youth, aged 5 to 17, are reported to have some degree of vision loss. As was true for the current investigation, a total of 30 visually impaired youth were enrolled in rehabilitative services at NDVS/SB in 2012 and were potentially available to participate in the study. In this case, the maximum possible sample size for this study would meet but minimal sample size guidelines (i.e.,  $n = \sim 30$  per cell) for increasing power and allowing for the utilization of parametric statistical procedures (Field, 2009). Consequently, if the issue of small n is to be avoided in future research endeavors, such designs may benefit from collaboration with other statewide vision rehabilitation centers to bolster the amount of available participants.

Also discussed above, this investigation was also limited by responder attrition, variable response rates, and missing data. Such missing data, as one may expect, prevented full analysis of pre, inter, and post-test changes in the students' observed social skills, restricted visual analysis, and prevented the use of other potentially viable analysis procedures tailored for single-case research designs (e.g., time series analysis). Though

compensatory and transformative procedures are available to process missing data, the amount of missing data was substantial enough to prevent such efforts without running the risk of unnecessarily distorting the data beyond what was actually obtained.

Furthermore, the lack of substantive data from non-participating students restricted the statistical analysis portion of this investigation to a repeated measures design and prevented between group comparisons, as was initially intended.

One consideration made for the relatively low rate of responding includes whether the mode of assessment (i.e., mail) influenced the 3<sup>rd</sup> party responses. Recent investigative efforts have examined the issue of participant attrition and variable responding when considering the data collection methods utilized, particularly those that involve sending assessment measures to participant by mail. As a whole, researchers have determined the presence of decrements in response rates when surveys are sent by mail, though the response rates appear to vary depending on the type of data collected (Rookey, Le, Littlejohn, & Dillman, 2012; Saunders, 2012). Generally, it appears as though data that involves psychological information (e.g., attitudes) is correlated with lower response rates (Rookey, Le, Littlejohn, & Dillman, 2012; Saunders, 2012). Alternatively, other investigations have noted increased response rates when surveys were distributed electronically (e.g., by email) when compared to surveys delivered by mail (Saunders, 2012). Although generally consistent with these findings, the current investigation evidenced a significant reduction in response rates that may be associated with the method of delivery.

Furthermore, though attempts at reducing responder attrition and response variability were attempted (e.g., provision of instructions in each mailing packet, including monetary incentives for participation, providing responders with mailing supplies and return postage with each assessment protocol), levels of responding remained lower than expected. Overall, missing data and variable response rates of 3<sup>rd</sup> party responders remained a significant issue, an issue which deliberate compensatory strategies may well target in future research efforts. Such strategies may involve alterations of data collection procedures to include web-based methods of data collection (e.g., sending surveys by email, utilization of website survey systems), personalized methods of participant contacts (e.g., phone contacts), increased prompting to complete the assessment protocols (e.g., reminder phone calls), or completion of data in discrete time periods (e.g., parents fill out forms while dropping off and picking up participating students at the vision rehabilitation site).

Ultimately, due to the response rates of 3<sup>rd</sup> party responders, the resulting truncated data set, coupled with the unavailability of a standardized measure of nonverbal social skills, and the unavailability of social skills measures standardized on a sample of visually-impaired individuals, limitations yet remain on the conclusions that may be drawn from the current investigation. Accordingly, future research efforts may significantly benefit from incorporating procedures to reduce variability in response rates (e.g., 3<sup>rd</sup> party responders completing measures by phone, assessment measures completed in person, increasing incentives for participation) and from the development of standardized measures for nonverbal social skills specifically normed on samples of visually impaired individuals to better inform normative comparisons. In summary, this

study was not without its limitations; however, it is the hope of this investigator that subsequent investigations may build upon its research methodology, further contribute to the literature base relevant to individuals with visual impairments, and better inform rehabilitative models that include social skills training as a core curriculum component.

### Clinical Relevance and Summary

The results of this investigation, though limited in scope, suggest a positive impact of visually impaired youth's participation in experiential methods to improve nonverbal social skills, in addition to general improvements in social skillfulness following their participation in short-term rehabilitative programming. Overall, the current investigation provided a number of valuable contributions to our understanding of nonverbal social skills training as it pertains to visually impaired youth and outcomes assessment of ongoing vision rehabilitation efforts. To the knowledge of this author, this investigation represents the first documented attempt at implementing and evaluating a social skills training program directly aimed at targeting nonverbal social skills in a sample of visually impaired youth. Given the documented need for individuals with visual impairments to engage in some degree of social skills training, per expanded core curriculum guidelines (Lohmeier, 2006), limited knowledge yet exists regarding the need for especially designed social skills programs to target nonverbal social skills, skills theorized to be particularly affected by individuals with visual impairment.

As discussed, the concept of social skills and social skills training is broadly defined and can contain potentially limitless targets for intervention, spanning from learning how to enter a conversation, waving "hello," to appropriately navigating relationship boundaries (Sacks & Wolffe, 2006). Though the abundance of potential intervention



topics for social skills lessons provides much latitude for individuals designing and implementing social skills curricula, it may create additional challenges for organizations that provide short-term rehabilitative services to a population in true need. Namely, no clear guideline exists for where to start or how to target such social skills interventions, given limited time and resources generally available in such programs. This investigation represents an attempt to limit such efforts to social skills that may be particularly challenging for individuals with visual impairments, namely, targeting social skills that generally need to be *seen* to be understood, practiced, and refined.

Though the examination of the social skills of visually impaired individuals is not a novel idea, this study represents a unique attempt at measuring long term nonverbal social skills gains following experientially-based rehabilitative interventions. Considering the insights gleaned from this initial attempt at improving outcomes of an experiential nonverbal social skills training program, future applied clinical research and outcomes assessment efforts may be better informed and further contribute to effective social skills training curricula and teaching strategies tailored to the needs of youth with visual impairment.

## APPENDICES

APPENDIX A  
Information Letter to Parents/Guardians

Dear parents:

Through our partnership with the University of North Dakota, North Dakota Vision Services/School for the Blind routinely conducts outcomes assessment of our programming efforts. To ensure our delivery of the highest quality educational and training services to our clients, we will be conducting a comprehensive data project to track the progress of the students attending short term programming for the winter/spring session of 2012.

During this time, parents or guardians of each attending student will be asked to fill out surveys that contain items involving your child's performance on tasks targeted by the educational model we follow at the NDVS/SB. For each attending student, you will be asked to fill out a number of surveys (30-60 minutes to complete) prior to the commencement of the winter session in January 2012. You will also be asked to fill out additional brief surveys (15-20 minutes to complete) during the weeks before and after your child's attendance in short term programming, and one final measurement at the end of the spring session (30-60 minutes to complete). Additionally, each child's performance will also be tracked by our staff members when they attend programming. It is important to note that all information gathered will be kept confidential and secure throughout the duration of the project to protect the identity and well-being of every participating student. Please note that your participation in this project is entirely voluntary and you may choose to refrain from participating, for any reason, at absolutely no cost or detriment to you or your participating child(ren).

We truly appreciate your involvement in this project. For your participation, you will receive a \$25 gift certificate to a local venue of your choice upon the completion of the project in July 2012. Additionally, the benefits of your participation in this data project are threefold: the information gathered will 1) give us a snapshot of the current needs of our students and 2) allow us to gauge the effectiveness of our current teaching methods and 3) allow us to better tailor our education and training methods to the specific needs of our students.

You will be contacted individually for further instructions within 1 week of receiving this letter. Enclosed in this packet are the assessments for the first round of measurements. Please send the completed forms back within one week of their arrival. If you have any questions, feel free to call Becky at **701-795-2700** or email at **rebecca.cicha@gmail.com**.

APPENDIX B  
Letter to Parents/Guardians (Follow-up)

**Dear parents:**

As a continuation of our data tracking project, enclosed is the second installment of surveys we ask that you fill out for each of your children participating in programming this year. The enclosed surveys will take approximately 15 minutes to complete.

Again, we appreciate your involvement in this project. As a reminder, for your participation, you will receive a \$25 gift certificate to a local venue of your choice upon the completion of the project in July 2012. Additionally, the benefits of your participation in this data project are threefold: the information gathered will 1) give us a snapshot of the current needs of our students and 2) allow us to gauge the effectiveness of our current teaching methods and 3) allow us to better tailor our education and training methods to the specific needs of our students.

Please send the completed forms back within one week of their arrival. If you have any questions, feel free to call Becky at **701-795-2700** or email at **rebecca.cicha@gmail.com**.

Thank you

APPENDIX C  
Letter to Parents/Guardians (Final)

**Dear parents:**

To conclude our data tracking project, enclosed is the final installment of surveys we ask that you fill out for each of your children participating in programming for the 2012-2013 fiscal year.

The enclosed surveys will take approximately 20 minutes to complete.

Like before, please complete these forms as soon as possible, preferably within a week of their arrival. As a token of appreciation for your participation in this project, a \$25 gift card is enclosed to be spent at a venue of your choice. We cannot thank you enough for the time and energy you've devoted to this project. This information will provide greater insights as to the needs of our students, the effectiveness of our teaching methods, and hopefully to guide program development in the future.

If you have any remaining questions regarding the data tracking project, please feel free to email me at **[rebecca.cicha@gmail.com](mailto:rebecca.cicha@gmail.com)**.

Thank you

APPENDIX D  
Survey Instruction Form

INSTRUCTIONS

Enclosed are 3 surveys to be completed by the parents or guardians of each student that attends programming at the North Dakota School for the Blind. One survey packet should be completed for each child.

All surveys include items relating to behaviors you have observed of your child. Your response options will include two different formats for each survey:

- 1) Your child's typical performance on the items listed, ranging from "Absent" to "Excellent"
- 2) Your child's typical performance on the items listed, rating both how often they perform the behavior and how important it is for you that they perform the behavior

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**\*\*IMPORTANT\*\***

As multiple measurements are required before and after programming attendance, it is very important that the surveys are completed as quickly as possible. Please return the survey packet within one week of receiving it, using the enclosed self-addressed envelope.

## APPENDIX E

### Modified Nonverbal Social Skills Checklists (By Age Group): Example Items

<b>Modified nonverbal social skills checklist (Ages 4-7)</b>		How Often?			How Important?		
		Never	Sometimes	Very Often	Not Important	Important	Critical
	Demonstrates comprehension of conventional gestures in social contexts, and/or uses them effectively.						
	Uses a tone of voice that is appropriate to the setting						
	Practices Braille at home						
	Matches the volume of their voice to the voices of others in different settings						
	Describes characteristics of people such as their voice quality, appearance, sound of their walk, personality traits						
	Responds to someone who is initiating a conversation						
	Uses common facial expressions such as smiling, frowning, sneering, and raising eyebrows in different social contexts.						
	Introduces self to new people						
	Tells how others are affected by him/her sharing, hitting, or making loud noises.						
	Waves goodbye						
	Determines when it is not appropriate to share something, and communicate it in an assertive manner.						
	Shakes their head "yes" or "no"						
	Engages in unacceptable mannerisms in public, such as rocking, jumping, or eye-poking						
	Assists with chores at home (e.g., puts away toys)						

Modified nonverbal social skills checklist (Ages 8-11)		How Often?			How Important?		
		Never	Sometimes	Very Often	Not Important	Important	Critical
	Participates when jokes are told and when gentle ribbing or joking about self or others occurs						
	Practices Braille at home						
	Uses acceptable language with consideration for the person or people present, the setting, and the social situation						
	Uses nonverbal behaviors to indicate interest in a speaker's message						
	Utilizes adaptive technology when working on schoolwork						
	When someone is speaking, the student:						
	Smiles						
	Nods						
	Faces the speaker						
	Maintains eye contact						
	Initiates and completes assigned chores						
	Demonstrates an awareness of socially acceptable and unacceptable body postures and movements in different social situations						
	Demonstrates appropriate mobility skills when in public (e.g., uses a cane)						
	Uses a relaxed sitting posture in informal situations						
	Uses an upright body posture when in more formal situations						
	Uses a casual posture and manner of speaking when with peers during leisure time						
	Uses common forms of body contact to communicate						
	Pats a person's back to indicate approval or to provide comfort						
	Demonstrates care, thoroughness, and consistency in performing responsibilities						
	Uses a special handshake with a peer						
	Pauses in conversations before interrupting others who are talking						
	Demonstrates affection toward family members and peers						
	Compliments peers for doing well in sports or performing well on school assignments						
	Seeks interaction with blind, low vision, and sighted peers and adults						
	Demonstrates knowledge of socially acceptable and unacceptable behavior for children in a variety of situations						



Modified nonverbal social skills checklist (Ages 12-15)		How Often?			How Important?		
		Never	Sometimes	Very Often	Not Important	Important	Critical
	Utilizes adaptive technology when working on schoolwork						
	Demonstrates knowledge of socially acceptable and unacceptable behavior for teenagers in various situations						
	Demonstrates socially acceptable behavior when attending a party						
	Identifies non-routine chores (e.g., repairing clothing, organizing closet) and performs them with or without assistance						
	Demonstrates socially acceptable behavior for teenagers when interacting with people who provide services						
	Uses nonverbal behaviors to communicate a sense of confidence through:						
	Gestures						
	Facial Expressions						
	Dress						
	Posture						
	Voice Tone						
	Practices Braille at home						
	Obtains information from others about appropriate behaviors in unfamiliar settings						
	Plans and carries out a weekend activity of choice with a friend						
	Waits to sit down until others can be heard pulling chairs to sit down						
	Talks in a whisper when others are talking in low voices						
	Demonstrates responsible behaviors when with peers (e.g., does not bend to peer pressure when the activity is dangerous or illegal)						
	Displays interest in participating in community activities						
	Asks for clarification from others when they use gestures to communicate information						
	Shows pride in personal achievements						

## APPENDIX F CURRICULUM TEMPLATE

The social skills groups will be scheduled in 30 to 60-minute blocks, consisted of structured discussion, demonstration, independent practice, and integrated practice of broad “Focus Skills” including select components of : Body Language (e.g., posture, body orientation, placement of legs, feet, and hands), Facial Expressions (e.g., communicative smiles, directional gaze, eye contact), Hand Gestures (e.g., waving “hello,” directional pointing, number emblems), and Paralinguistic behaviors (e.g., speech speed, tone, conversational turn-taking, and indicating interest). Each daily lesson will be structured according to the following template:

### **Group Orientation (5-10% of group time)**

#### **1) \*\*Group Introductions (for Day #1)**

- a. **Objective:** Introduce facilitator; students introduce selves by name
- b. **Method:** Basic introductions; go around the circle and give a self description (e.g., age, how many times they’ve attended programming, their visual diagnosis, functional vision status)

#### **2) Group Rules**

- a. **Objective:** Review behavioral expectations for group
- b. **Method:** Discuss behavioral expectations during group, highlighting the following core components:

- i. **“Pebble:”** Developed by R. Cicha, “pebble” is a phonetic acronym (“PBL”) that represents basic social skills group expectations: using polite mannerisms (“P”), honoring personal boundaries (“B”), and employing listening skills (“L”)
  
- ii. **“Chicken Bubble:”** Developed by R.Cicha: a tactile-spatial, proprioceptive (and fun!) strategy for establishing appropriate physical boundaries with others. Students extend elbows out from body in the form of “chicken wings” to gauge the distance they should be sitting from each other. Usage of “chicken bubble” as a code word for re-establishing appropriate boundaries will be used throughout groups, particularly with younger students.
  
- iii. **“1-2-3” Token Rating System:** Developed by R. Cicha: The 1-2-3 system is a simplified behavioral rating system in which elementary-aged students will be rated on their participation across each social skill group session, on a scale of 1 to 3, with regard to “PBL” variables. Note: This system was independently developed without normative data and is to be used purely as an informal strategy to increase student motivation and compliance with group activities and not to be used in the data analysis of outcomes for the current project.

## 1. Operational Definitions of Scoring Criteria

- a. 1: “Off Track”
- b. 2: “Okay. Almost There!”
- c. 3: “On-Track”

## 2. Scoring & Token Procedure

- a. The students will be rated after each class
- b. Ratings will be tallied throughout the week
- c. At the end of the week, the average score for each student will be generated and rounded to the nearest whole score
- d. The students will be allowed to purchase a token prize for their score; token prizes will increase in value for larger scores and/or students with high scores will be given free pick of token prize regardless of value

## 3) Ice-breaker activity

- a. **Objective:** Utilize game activities promoting listening skills, team work, getting to know other students, and encouraging participation from all
- b. **Method:** Celebrity interviews (i.e., interview peer on a specific topic and report back to the group); Identification of peers by voice (“Shenanigans!” game); “ABC” game (i.e., listing items of a category alphabetically); activity. from “101 Social Skills Activities that Build”

#### 4) General social skills discussion

- a. **Objective:** Introduce the purpose of social skills group and its relevance to visually impaired individuals.
- b. **Method:** Encourage group discussion from students familiar with the group. Ask group to generate ideas of what social skills are, examples, what they are used for, consequences of social skillfulness vs. *unskillfulness*. Discuss core reasons why social skillfulness is important for individuals with visual impairment and why they may need extra help with skill-building.
  - i. Emphasize student generation of discussion. Facilitator contributes as necessary.

#### **\*\*Review of Previous Focus Skills (To be incorporated on Days #2-4) (10%)**

##### 5) Review of group expectations

- a. **Objective:** Review group expectations, ensure students' memory of and increased awareness to targeted group behaviors (i.e., "PBL" behaviors)
- b. **Method:** Solicit verbal contributions from students on "PBL" definitions and associated consequences

##### 6) Verbal Review of Previous Focus Skill

- a. **Objective:** Solicit student discussion regarding the definition of the focus skill, its description (functionally; how to perform it), the rationale behind practicing it, and the social implications surrounding effective or ineffective execution
- b. **Method :** Straightforward discussion format for older students. Game "Take Turns" ball: students sit in a circle and pass around a ball during discussion;

only the student with the ball is allowed to speak. Secondary gain: practice conversational turn-taking ability.

**7) Practice: Individual Demonstration and Practice of Previous Focus Skill**

- a. **Objective:** Provide additional opportunity to practice the focus skill in isolation for increased practice, enhancement of efficacy
- b. **Method:** Utilize same method as originally employed in previous lesson. Use another game or group activity in which the skill can be incorporated.

**Introduction of Focus Skill (10%)**

**8) Definition of Focus Skill**

- a. **Objective:** Define social skill.
- b. **Method:** Provide verbal definition of focus skill, including scenarios in which the skill may be employed; describe physical components of the skill in order for it to be effectively executed.

**9) Discussion of the rationale of learning and practicing the focus skill**

- a. **Objective:** Provide thorough understanding for why the focus skill is important, highlighting select social consequences of effective and non-effective execution of the focus skill.
- b. **Method:** Discussion format. Solicit group discussion as much as possible; allow the group to generate rationale-based ideas.

**10) Discussion of personal and practical examples of focus skill**

- a. **Objective:** Provide personalized, understanding and application of the relevance of the skill

- b. **Method:** Discussion format. Ask students to describe their personal experiences with the focus skill (e.g., have they used it before?, did they find themselves successful?, have they found difficulties with perceiving the skill from others?) Solicit group discussion as much as possible; allow the group to generate rationale-based ideas.

### **Demonstration and Assisted Practice of Focus Skill (30%)**

#### **11) Facilitator demonstration of focus skill**

- a. **Objective:** To provide students with an initial exposure to the focus skill
- b. **Method:** The facilitator will engage in the focus skill while simultaneously providing a descriptive narrative of the skill's nonverbal components

##### **i. Individualized practice of focus skill**

- ii. **Objective:** Students will begin to learn how to perform the focus skill
- iii. **Method:** Each student will be given time to practice individual components of the target skill with assistance from facilitator until sufficient mastery of skill is demonstrated. Facilitator instruction, feedback, and verbalized narratives of focus skill performance will be given to all students to ensure accurate shaping and thorough understanding of skill components

### **Integrated Practice of Focus Skill (30%)**

- c. **Objective:** Allow for further practice of focus skill (and previous focus skills reviewed) within more generalizable constraints

- d. **Method:** Utilization of activity-based experiences to incorporate new focus skill into functional behavioral repertoire including the following:
  - i. Games or role play social scenarios incorporating focus skill
    - 1. Socially inappropriate “Too much/too little” focus skill use
    - 2. Socially appropriate “Just right” focus skill use
    - 3. Option: Use “Too much, too little, just right” game format
  - ii. Solicitation of peer feedback during focus skill performance
  - iii. Provision of group facilitator feedback of focus skill performance

**Focus Skill Summary (5%)**

- e. **Objective:** To provide final summary of the current focus skill to allow for maximal understanding and retention of skill components, rationale, and social implications.
- f. **Method:** Group discussion of focus skill: description; rationale; social implications. Encourage as much student-led discussion as possible. Emphasize relatively more participation and leadership from older and/or returning students of any given group. Facilitator contributes as needed.
  - i. “Mission Possible:” Developed by R. Cicha. Synonymous to a homework assignment. Students will be assigned a specific assignment to practice the targeted Focus Skill with peers and sighted staff in free time before next group



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