

*Journal of the*  
**South Pacific**  
**Educators**  
*in*  
**Vision Impairment**

**VOLUME 7, NUMBER 1, 2014**

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## **ROLE OF THE SPEVI JOURNAL**

South Pacific Educators in Vision Impairment (SPEVI) Inc. is the major professional association for educators of students with vision impairments in Australia, New Zealand and the South Pacific region. SPEVI acts as the professional body in matters pertaining to the education and support of preschool and school-age students who are blind, have low vision, deaf-blindness, or additional disabilities.

The Editorial Committee intends the Journal to be a vehicle for informing researchers, administrators and educators working in government and non-government education organisations, as well as specialist and generic teachers, orientation and mobility (O&M) instructors, allied professionals, parents and others in our communities about research, issues, policies and their implications for practice in Australia, New Zealand and the Pacific Region.

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## **SPEVI JOURNAL SUBSCRIPTION AND MEMBERSHIP**

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## **CALL FOR ARTICLES**

Original manuscripts, reports and news items are sought for the refereed and non-refereed sections of the 2015 issue of JSPEVI. Topics appropriate for the journal include, but are not limited to the following:

- original research studies, with practical relevance to education of persons who are blind or vision impaired,
- literature and book reviews,
- conceptual, policy or position papers,
- descriptions, reviews or evaluations of innovative instructional curricula, programs or models of education for persons who are blind or vision impaired, and
- letters to the Editor

### ***Letters to the Editor***

Members of the editorial committee wish to encourage discussions of important issues that affect the education of children and adults with vision impairments. The journal should be a vehicle for continuing dialogue about current and future directions. The editorial committee invites letters that explore the many issues facing professionals and families supporting learning with sensory disabilities, particularly those arising from articles in the journal.

## **GUIDELINES FOR CONTRIBUTORS**

All manuscripts and reports should be produced in Word (or equivalent) format, in 11-point Arial font, with 2.54cm page margins, double line spacing, left alignment of paragraphs, and pages numbered.

### ***Manuscript articles for peer review***

Manuscripts consisting of the following sections should be submitted electronically as separate files:

*Section 1 Author information*, including (a) the manuscript title, (b) name/s of each author(s), (c) professional status/title and place of employment of each author, and (d) contact details (address, email, fax, telephone) for the principle author, or the co-author who will be handling correspondence.

*Section 2 Manuscript*. The preferred size limit for manuscripts of articles is approximately 4000 words, with consideration for the nature of the content. Manuscripts should commence with an Abstract of less than 120 words, giving a brief summary of the submission. A running title header should be included on each page (with no authorship information included). Figures

and tables should be cited in the text, with a suggested location identified, for example “Insert Figure 1 about here”. Always refer in the text to Table 1 or Figure 2 and not to “Table 1 above” or “Figure 1 below”. Manuscripts should conform in style to the Publication Manual of the American Psychological Association (6th edition, 2010). A brief APA guide may be downloaded from Curtin University website, <http://libguides.library.curtin.edu.au/content.php?pid=141214&sid=1335391>.

*Section 3 Figures and tables* should be numbered and provided in a separate file. Tables should be created using a table function, such as in Microsoft Word, and double line spaced. Figures must be production-ready, with consideration to the readability of the figure when reduced for publication.

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Manuscripts will be acknowledged upon receipt. Following preliminary editorial review, articles will be sent to members of the Editorial Panel and where warranted, to consulting reviewers who have particular expertise in the subject. The review process may sometimes take up to three to four months. This journal uses the “blind review” system. The names of consulting reviewers will periodically be published in the journal. Reviewed manuscripts will remain the property of South Pacific Educators in Vision Impairment (SPEVI). Original manuscripts will be returned to the primary author if not accepted for publication.

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### ***Manuscript submission***

Please forward your contributions for the 2015 issue of JSPEVI to the Convening Editor:

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# President's Message

Frances Gentle

Dear Readers,

Welcome to the seventh edition of the Journal of the South Pacific Educators in Vision Impairment (JSPEVI). As the journal goes to print, preparations are in full swing for the 2015 SPEVI Biennial conference in the heart of Melbourne. The Conference Committee, under the leadership of Rachel Morgan and Marilyn Dayman, has put together a world-class program that includes keynote presentations by Karen Wolffe, Lauren Ayton, Shiralee Poed and Susan LaVenture. On behalf of SPEVI, I wish to thank our sponsors and exhibitors for their support, in particular the Victorian Department of Education and Early Childhood Development, Vision Australia, the International Council for Education of People with Visual Impairment (ICEVI), Guide Dogs Victoria, Guide Dogs Australia, Insight Education Centre for the Blind and Vision Impaired, HumanWare, Quantum Reading Learning and Vision, Read and Match, and Rowe Consulting and Associates.

Another SPEVI initiative that is taking shape as I write this message is the development of a set of SPEVI National Standards for Specialist Teachers of Students with Vision Impairment. The structure and key themes of the SPEVI national standards are aligned with the national professional standards for teachers that were published in 2011 by the Australian Institute for Teaching and School Leadership (AITSL), and endorsed by the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA).

As the peak professional association representing teachers in the field of vision impairment in our Region, SPEVI is well positioned to develop a set of widely acceptable benchmarks for professional practice. The Standards were drafted at a SPEVI workshop that was held at the RIDBC Renwick Centre in November 2014. The 38 workshop participants were drawn from all Australian states and territories and educational providers (government, independent and church), suggesting the current relevance of national standards for specialist teachers working in the field of vision impairment. I wish to recognise the substantial contribution of Trudy Smith of RIDBC Renwick Centre. Trudy was instrumental in the drafting, distributing, revising and finalising the SPEVI national standards.

What is special about the SPEVI national standards is that they bring into focus the essential professional attributes of teachers of students with vision impairment. In my opinion, the SPEVI National Standards for Specialist Teachers of Students with Vision Impairment will serve as a valuable advocacy and promotional document for members who are engaging with national or local government bodies and a wide variety of education providers. It is anticipated that the standards will be finalised at the 2015 SPEVI conference and presented to AITSL for discussion in early 2015.

Governance of SPEVI is managed by national Committees of Management in Australia and New Zealand. The key roles of the national committees are to support and promote the Vision, Mission and Aims of the Association, and to support SPEVI councillors and members across Australia, New Zealand and the Pacific Island Countries. During 2014, the SPEVI Committee of Management farewelled Tim Crowe-Mai and Sandie Mackevicius. Tim and Sandie have been active members of SPEVI for many years and are well known to members. I wish them both well in their future adventures. Other changes this year within the Australian Committee include the appointment of Nicole Anthonysz as Secretary, David Rice as Treasurer, and Sue Silveira as Public Officer. Sheila Klinger has agreed to remain on the



Committee and we welcome her expertise as the former SPEVI Treasurer and current Principal of the South Australian School for Vision Impaired (SASVI).

SPEVI is fortunate to have Phia Damsma in the role of Administrator of the SPEVI Website and SPEVI List, and Karen Gilligan and Jodie Hoger administering the SPEVI Blog. Phia's company, Sonokids hosts the SPEVI website for free, and Phia has made a substantial contribution to the information provided for members via the website and email List. The SPEVI List and Blog, together with Round Table's "ozbrl" email list and the electronic bulletins from SVRC (Statewide Vision Resource Centre), provide great opportunities for educators and parents to share information and to learn about the "goings-on" in our part of the world. Phia, Karen and Jodie welcome news items from members for the List or Blog. Their email addresses are [phia@sonokids.com](mailto:phia@sonokids.com), [Karen.Gilligan@Blennz.school.nz](mailto:Karen.Gilligan@Blennz.school.nz), and [johoger@internode.on.net](mailto:johoger@internode.on.net).

Two relatively new Committee positions that will be of interest to members are those of Political Advocate and Access Coordinator. These positions are currently held by Nicole Donaldson and Phia Damsma, and their first initiative for 2015 is to conduct a member survey during the 2015 SPEVI conference. The survey offers members the opportunity to identify current issues in educational policy and provision for children with vision impairment that should be explored by SPEVI at regional, national or local levels.

SPEVI has commenced a membership drive, with the aim of attracting new members and encouraging former members to renew their membership. During a recent meeting, the Committee of Management established a membership subcommittee to brainstorm possible activities and initiatives. If you are a current member and would like to join the SPEVI membership subcommittee or contribute ideas, please contact one of the subcommittee members: Hellen Riley, Leanne Smith, Jodie Hoger, Sue Silveira and myself (email addresses appear on the back pages of the journal).

I wish to acknowledge the work of Rachel Morgan, Marilyn Dayman and members of the 2015 SPEVI Conference Committee who have created a high quality conference. I would like to also thank our Committees of Management and Councillors in Australia, New Zealand and the South Pacific. Our professional association is enriched by the ideas and perspectives of members who live and work in diverse settings. A list of SPEVI's Office Bearers has been included on the final pages of this journal.

SPEVI brings together educators, health professionals, technology consultants, O&M instructors, parents/carers and others who have an interest in promoting high quality educational outcomes for children and youth with vision impairment, including those with additional disabilities. This year's SPEVI journal reflects the diversity of our membership. I join with you in taking pride in SPEVI's activities and congratulate all the contributors to this year's volume of the JSPEVI for their submissions and for the quality and scholarship of the articles and reports.

# Editorial

Frances Gentle

*Convening Editor*

The major purpose of our journal is to provide SPEVI members with information about current research and activities in the field of vision impairment. This issue presents six scholarly articles, and as well, several reports on the activities of organisations and individuals who are doing highly important work in the related fields of education, vision impairment and print disability. Carolyn Palmer's article presents an interesting study of the potential effects of albinism on children's social development. The study found that of the 26 student participants, those with albinism tended to act more assertively than did those with vision impairment or with no vision loss.

In the second article, Jill Clark discusses the impact of new technologies on the use of braille in New Zealand, and emphasises the continued important role of specialist teachers to teach braille. Continuing with the theme of technology, the third article by Phia Damsma and Paul Pagliano provides a scholarly review of research literature on the use of the QWERTY keyboard by children who are congenitally blind. Their literature review is an essential component of Phia's doctoral studies at James Cook University, and as editor, I look forward with keen anticipation to subsequent papers on computer and keyboard use by students who are blind.

In the fourth article, Paul Pagliano reflects upon Tadoma, a tactile speech reading system initially invented and developed in the 1930s at Perkins School for the Blind for use in teaching children who were born deafblind. Although superseded by new technologies during the 1980s, Paul proposes that Tadoma might still have a place as an important teaching method for use with people who are post-lingually deaf and who have good speech, language and social skills.

Louise Fritz presents the first of two articles in this issue by RIDBC Renwick Centre students who are currently completing their post-graduate educational studies in vision impairment. Louise has examined the process of teaching emergent braille literacy to young children and advocates for family-centred and play-centred approaches. Emily White presents two critical reviews of recent publications that have relevance to educators working in our field. The first of the two articles reviewed relates to a small Queensland study of the role and practice of specialist teachers of students with vision impairment. The second article presents an American case study of physical education provision for children and youth with CHARGE syndrome.

The quality and scholarship of articles presented in each volume of JSPEVI is closely linked with the peer review process. We are fortunate to have an Editorial Committee and an Advisory Panel of academics and members of organisations concerned with the education of children and youth with vision impairment. On behalf of SPEVI, I take this opportunity to thank the Committee and Panel for their voluntary contributions to the referee process. This often includes author feedback during the first and second peer review periods.

# Social-emotional development of children with albinism

Carolyn D Palmer

*Associate Professor, School of Education,  
Flinders University, South Australia*

## ABSTRACT

This article reports a study that explored two aspects of the social-emotional development of three groups of young individuals: students with albinism, students with vision impairment and students with no vision problems. Teachers were asked to rate students' behaviour in relation to aggressive interaction and depressive reaction using the Social-Emotional Dimension Scale (SEDS). The findings showed that overall, the majority of students with albinism did not interact aggressively, although they tended to act more assertively than children with vision impairment (not albinism) and students with no vision problems. In addition in most areas of depressive reaction, there were minimal differences between students with albinism and their peers in the other two groups, although they were less likely to say derogatory things about themselves than their peers with vision impairment (not albinism) and slightly more likely than the sighted group.

*Key words: Albinism, vision impairment, blindness, social interaction, social-emotional development, aggressive interaction, depressive reaction.*

## INTRODUCTION

Social-emotional development plays a critical role in all aspects of a child's development. Children learn and develop an understanding of their world by interacting with others, and by learning to relate to others enables them to establish friendships, make connections with peers and understand the world in which they live (Roe, 2008). Roe states that socially competent children use such strategies as "observing non-verbal behaviour" reading group and play situations and interpreting the feelings, interests and points of view of their classmates (p. 148).

When children cannot see, they are unable to pick up the many non-verbal behaviours that typify children's day to day interactions and neither can they observe the behaviour of their peers or the way their peers respond to their behaviour (Campbell, 2007). They may also have a limited or distorted understanding of play activities, social rules, and social conventions, therefore, it might be assumed that this will have an impact on their social development (Diamond, 2002, cited in Hooper & Umansky, 2009). Diamond emphasises the importance of vision on social interactions because of the need to observe and interpret social behaviour and the subtle social cues communicated via gesture and body language. In addition, Ophir-Cohen Ashkenazy, Cohen and Tirosh (2005) reason that children with vision impairment frequently lack early social experiences and lack of early social experiences can affect children's social-emotional development.

A study of the literature reveals that emotional competence is linked to social competence, and children who control their emotions are perceived as more socially competent than those who do not. According to Guralnick (1991), there is growing evidence that failure to establish productive relationships with peers in the early years signals potentially significant difficulties in future life adjustment. Bellanti and Bierman (2000) agree, suggesting that the long term effect of poor peer relationships can include "truancy, antisocial behaviour, social anxiety, and an increased need for mental health services" (Parker & Asher, 1987 cited in Bellanti &

Bierman, 2000, p. 66). Knight and Hughes (1995) and Smart and Sanson (2001) also address the importance of developing social competence in the early years. They point out that all children need to attain social competence because to do so means there is greater likelihood of social and emotional adjustment later on (1995; 2001). Mostow, Izard, Fine, and Trentacosta (2002) also suggest that there is a link between emotions and the development of appropriate social interactions and peer relationships. They comment that the “formation of adaptive intersystem connections between emotions and cognitions enables appropriate activation, modulation, and use of emotions, which are essential to healthy social transactions and the development of social bonds” (Izard, 2001, cited in Mostow et al., 2002, p. 1775). Taffe and Smith (1994) agree, explaining that peer interactions contribute to children’s emotional well-being and self-concept, enable them to observe interpersonal behaviour and assist them to develop skills that demonstrate interpersonal competence.

### **SOCIAL-EMOTIONAL DEVELOPMENT IN CHILDREN WITH SENSORY IMPAIRMENTS**

Research on the social-emotional development of students with vision impairment has revealed that the social experiences of these children are less than adequate when compared with the experiences of their sighted classmates (Sacks, 2006, George & Duquette, 2006). The loss of vision can also lead to such emotional reactions as a sense of inferiority, lack of hope, loneliness, denial, anxiety, and depression (Dodds et al., 1994; Upton, Bush, & Taylor, 1998, cited in Ben-Zur and Debi, 2005). The loss of sight often leads to such social problems as non-acceptance, difficulty in sustaining relationships, and attitudes of pity and overprotection from others (Steffens & Bergler, 1998). Campbell (2007, p. 351), in her research on understanding the emotional needs of children who are blind, argues that “the emotional development of young children who are blind may be at risk because of the children’s capacity to share and respond to the feelings of others”. Roe (2008) also proposes that children with vision impairment are vulnerable in the area of social competence, and emphasises that social-emotional development plays a significant role in their acquisition of interpersonal skills and the establishment of quality social interactions and friendships (Roe, 2008). Roe cites Aviles et al. (2006) who claim that “Social-emotional competence involves cooperative and pro-social behaviour, initiation and maintenance of peer friendships and adult relationships, management of aggression and conflict, development of a sense of mastery and self-worth, and emotional regulation and reactivity” (Roe, 2008, p. 148).

The present study reports on one aspect of the findings of a much larger study that aimed at investigating the effects of albinism on children’s social competence. The purpose of this paper was to report on the social-emotional reactions of students with albinism, focusing on whether or not students interacted aggressively and displayed depressive reaction. Each of these of social-emotional reactions had various sub-items that were examined as presented in the discussion and tables below.

### **RESEARCH METHOD**

The research questions that guided this study focused on two areas of social-emotional development as identified in the Social-Emotional Dimension Scale (SEDS): aggressive interaction and depressive reaction and were as follows. Do students with vision impairment:

- display aggressive behaviour when interacting with peers?
- display depressive reaction when interacting with peers?

The Social-Emotional Dimension Scale (SEDS), which is designed as a means for rating students’ behaviour, is an effective tool for identifying categories of behaviour where students are at risk in areas that impact on social competence.

The Social-Emotional Dimension Scale (SEDS) is described by Hutton and Roberts (1986, p. 3) as a highly structured, norm-referenced rating scale that can be used by school personnel to identify students who are “at risk” for problematic behaviours. The use of the SEDS, aimed

at establishing whether or not non-academic behaviours are exhibited by the child and may be judged by teachers to interfere with the student's social competence. The scale was designed to facilitate the early identification of students with emotional and behaviour disorders, to identify those with behaviour problems that may require further exploration, to establish the interaction between students and teachers, which may require further exploration, and to provide professionals with information to help them to assist students to "make more effective use of their instructional experience" (Hutton & Roberts, 1986, p. 1). Anderson and Overdof (1991) used the Social-Emotional Dimension Scale (SEDS) to examine behavioural differences among junior high students enrolled in three special education programs. In their report on Behavioral variations among special populations they reported that according to Hutton and Roberts (1986): the SEDS was a reliable and valid test to identify potential behaviour problems in school students. They stated that:

Test-retest, internal consistency, and inter-rater reliability measures reported by the test authors are within acceptable limits for using the SEDS as a screening instrument: coefficient alphas exceed the .80 level, and all reliability coefficients are significant at the .01 level or higher. Content, criterion-related, and construct validity are discussed in the manual. The authors report a highly significant ( $p < .01$ ) correlation of the Walker Problem Identification Checklist (Walker, 1970) and the SEDS ( $r = .7$  to  $.8$ ) with normally achieving and mildly handicapped students. (Anderson & Overdof, 1991, p. 8)

The authors reported that "the SEDS may be a useful instrument to assess the behaviour of students for whom mainstreaming is a goal" and that it has the potential to identify "areas of potential conflict between the social-emotional behavior of the special education student and the expectations of the classroom" (p. 14).

## THE PARTICIPANTS

Three groups of students participated in the study: ten students with albinism, seven with vision impairment and nine students with no vision loss. The major focus of the research was on young people with albinism. The purpose of including students with vision impairment but not albinism and students with no vision problems was to help interpret the data collected on children with albinism. The student participants were aged between 8 and 16. Tables 1a; b & c present the gender, eye condition and age of the participants.

**Table 1a: Profile of students with Albinism**

Participants	Gender	Eye Condition	Visual Acuity	Age
1	M	Albinism	6/60; 6/60	9 years
2	F	Albinism	6/60; 6/60	11 years
3	F	Albinism	4/60; 4/60	11 years
4	M	Albinism	6/24; 6/24	14 years
5	M	Albinism	6/60; 6/60	9 years
6	M	Albinism	6/60; 6/24	13 years
7	M	Albinism	6/36; 6/36	11 years
8	M	Albinism	6/24; 6/24	11 years
9	F	Albinism	6/24; 6/24	8 years
10	M	Albinism	6/60; 6/60	16 years

**Table 1b: Profile of students with vision impairment (not Albinism)**

Participants	Gender	Eye Condition	Visual Acuity	Age
11	F	Microcephaly progressive degenerative retinal dystrophy	4/60; 4/60	13 years
12	F	Coloboma	6/60; 6/60	11 years
13	M	Retinitis Pigmentosa	6/24; 6/24	13 years
14	F	Encephalitis, vision impairment	6/60; 6/60	13 years
15	M	Congenital nystagmus	6/60; 6/24	12 years
16	M	Bilateral lens implant, congenital cataracts, micro cornea, astigmatism	6/60; 6/60	12 years

**Table 1c: Profile of Students with no Vision Impairment**

Participants	Gender	Eye Condition	Visual Acuity	Age
17	M	No vision loss		10 years
18	M	No vision loss		12 years
19	M	No vision loss		9 years
20	M	No vision loss		8 years
21	M	No vision loss		13 years
22	M	No vision loss		10 years
23	M	No vision loss		13 years
24	F	No vision loss		12 years
25	M	No vision loss		9 years

## THE INSTRUMENT

Data were collected using the Social-Emotional Dimension Scale (SEDS) which relied on informant reports from teachers. Six aspects of the SEDS questionnaire from the section on areas of aggressive interaction and four areas of depressive reaction were examined. Class teachers rated each of the items according to whether the behaviour had been observed never or rarely, occasionally or frequently. For the purpose of this study, the SEDS instrument was used as an informant report to assess the social-emotional development of the three groups of participants in their educational setting. Table 2 presents the date on which students were rated and the amount of time approximately that the students had been known to the teacher.

**Table 2: Date students were rated and the amount of time approximately the students had been known to the teacher**

Student	Date rated	Rated by:	Known to teacher
1	8 December	Class teacher	10 months
2	12 December	Class teacher	10 months
3	December	Class teacher	10 months
4	14 July	Class teacher	6 Months
5	12 September	Class teacher	8 months
6	23 March	Vision Support teacher	Approx 2 years
7	28 March	Vision Support teacher	Approx 2 years
8	18 September	Vision Support teacher	Approx 2-3 years
9	27 April	English teacher	Approx 2 years
10	18 September	Vision Support teacher	Approx 2-3 years
11	12 September	Class teacher	8 months
12	12 September	Class teacher	8 months

**Table 2. (continued)**

Student	Date rated	Rated by:	Known to teacher
13	12 September	Class teacher	8 months
14	12 September	Class teacher	8 months
15	12 September	Class teacher	8 months
16	12 September	Class teacher	8 months
17	7 December	Class teacher	10 months
18	6 December	Class teacher	10 Months
19	13 December	Class teacher	10 Months
20	13 December	Class teacher	10 Months
21	9 December	Class teacher	10 Months
22	9 December	Class teacher	10 Months
23	9 December	Class teacher	10 Months
24	6 December	Class teacher	10 Months
25	6 December	Class teacher	10 Months

### MEASURING SOCIAL/EMOTIONAL DEVELOPMENT

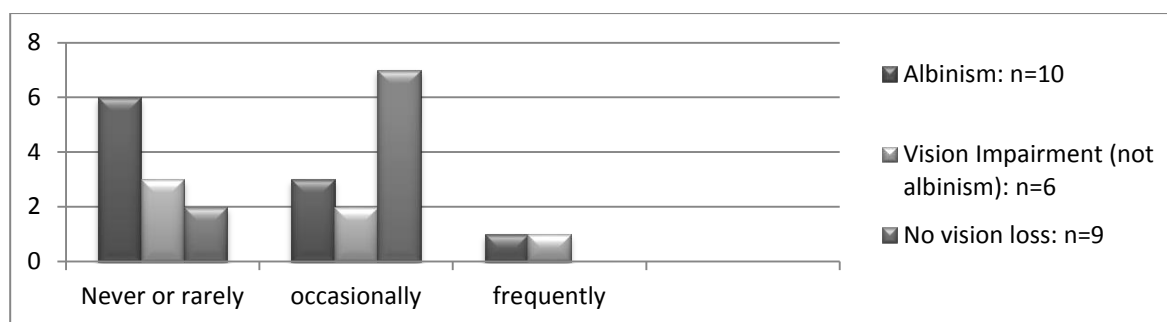
The Social-Emotional Dimension Scale (SEDS) is described by Hutton and Roberts (1986, p. 3) as a highly structured, norm-referenced rating scale that can be used by school personnel to identify students who are “at risk” of presenting with problematic behaviours. The use of the SEDS in this study aimed at establishing whether or not aggressive interaction and depressive reactions were exhibited by the participants. The scale was designed to facilitate the early identification of students with emotional and behaviour disorders and to identify those with behaviour problems that may require further exploration (Hutton & Roberts, 1986, p. 1).

Teachers were given the SEDS and asked to select items that best described the child’s usual response in given situations in relation to aggressive interaction and depressive reaction. The section to follow reports on the findings.

*Aggressive interaction:* Teachers were asked to rate aggressive interaction according to six categories indicating whether the stated behaviour was observed never or rarely, occasionally, or frequently. The six categories were: argues, fusses or talks back to other students, does things that annoy or bother other students, does things that annoy or bother the teacher, argues, fusses or talks back to the teacher, fights physically with other students, fibs or lies to other students. The following results were obtained.

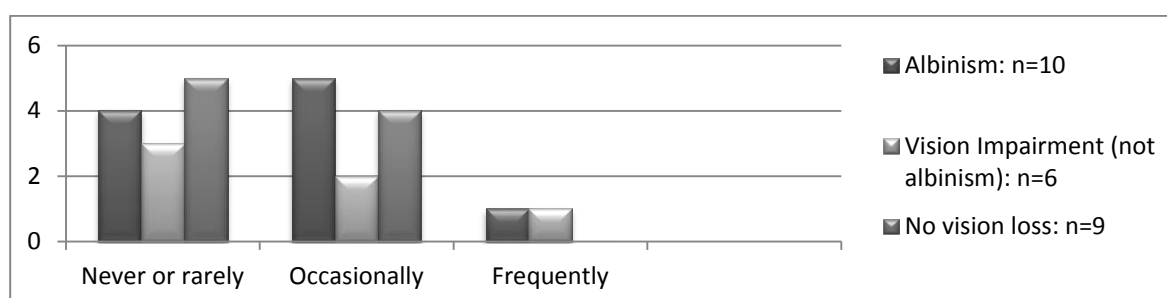
*Students argue, fuss, or talk back to other students:* Teachers reported that one student (10%) with albinism frequently argued, fussed or talked back to other students, three (30%) occasionally did so, and six (60%) never or rarely exhibited this behaviour. Whereas six (60%) students with albinism never or rarely argued, fussed or talked back to others, teachers reported that three students (50%) with vision impairment (not albinism) never or rarely exhibited this behaviour, two (33%) did so occasionally, and one (17%) frequently. On the other hand, according to their teachers, two students with normal vision (22%) never exhibited this behaviour, and seven students (78%) fussed, argued or talked back to other students occasionally. No sighted students were reported to exhibit this behaviour frequently.

In summary, as seen from the responses depicted in Figure 1, the majority of students with albinism never or rarely argued, fussed or talked back to other students, whereas a small majority of students (56%) with vision impairment (not albinism), and a large majority (78%) of students with no vision loss occasionally behaved in this manner.



**Figure 1: Numbers of students by category (albinism, vision impairment but not albinism, no vision impairment) who argue, fuss, or talk back to other students (N=25)**

Students do things that annoy or bother other students: Of the students with albinism, four (40%) never did things that annoyed or bothered other students, five (50%) did so occasionally, and one (10%) frequently. When these findings were examined in the light of data collected on students with vision impairment (not albinism) and students with no vision loss, it could be concluded that the students with albinism did things occasionally that annoyed or bothered other students compared with the students with vision impairment (not albinism) and students with no vision loss. However, fewer frequently annoyed or bothered other students than their peers with vision impairment. Teachers' reports on students with vision impairment (not albinism) and students with no vision problems reported that three students (50%) with vision impairment (not albinism) never or rarely did things to annoy or bother other students, two (33%) did so occasionally, and one (17%) frequently. Of the nine students with normal vision, five (56%) never or rarely exhibited this behaviour and four (44%) did so occasionally. These responses are represented in Figure 2.



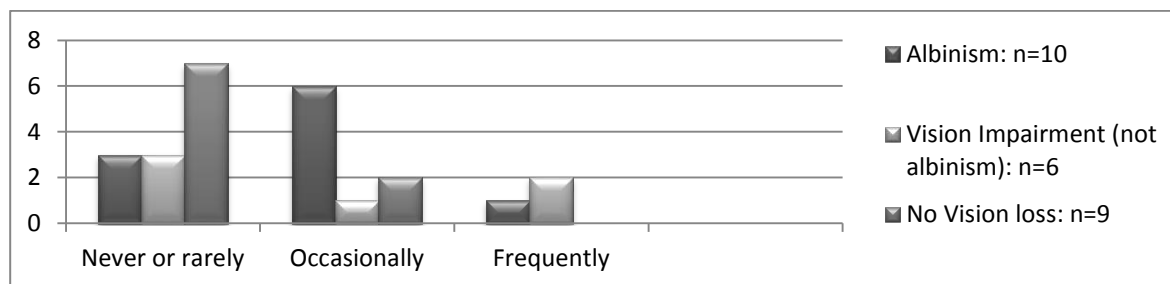
**Figure 2: Number of students by category (albinism, vision impairment but not albinism, no vision impairment) and rate of response, of students who do things that annoy or bother other students (intentionally or not): N=25**

In summary, the majority of those students in the study with albinism bothered other students occasionally, as did the students with vision impairment (not albinism). On the other hand, the majority of the students with normal sight never bothered their peers.

Students do things that annoy or bother teachers: As represented in Figure 3, three (30%) students with albinism never or rarely did things to annoy or bother the teacher, six (60%) did so occasionally, and one frequently. Three students (50%) with vision impairment (not albinism) and seven with "normal" vision (78%) never annoyed or bothered the teacher. One student with vision impairment (not albinism) (17%) and two with no vision loss (22%) did so occasionally, and two of the vision impaired group (33%) did so frequently.

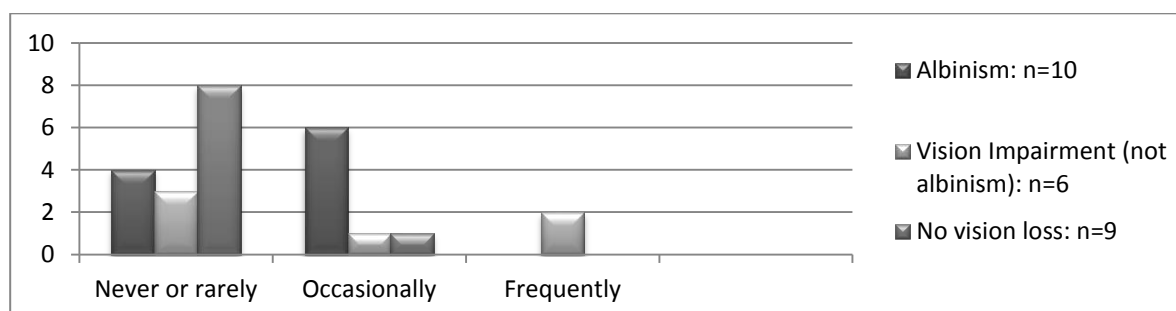
The majority of students with albinism did things that annoyed or bothered teachers at least occasionally. By comparison, teachers reported that half of the students with vision impairment (not albinism) and a minority of students with no vision loss behaved in this way at least occasionally.





**Figure 3: Percentage of students by category (albinism, vision impairment but not albinism, no vision impairment) and rate of response, who do things that annoy or bother the teacher (intentionally or not) N=25**

Students argue, fuss or talk back to teachers: Students ranged in their tendency to argue, fuss, or talk back to the teacher as seen in Figure 4. Four (40%) children with albinism were reported never to do this and six (60%) did so occasionally. To help interpret these data, a comparison was made with the results of this aspect of the SEDS questionnaire collected on students with vision impairment (not albinism) and students with no vision problems. More students with albinism were inclined to argue, fuss or talk back to the teacher than students in the other two groups. Although four students with albinism (40%) never or rarely argued, fussed or talked back to the teacher neither did three students with vision impairment but not albinism (50%) and eight students with normal vision (89%). Six students with albinism (60%) occasionally engaged in this behaviour, compared with only one student with vision impairment but not albinism (17%) and one sighted student (11%). In addition, two students with vision impairment (not albinism) frequently argued, fussed or talked back to the teacher (33%).

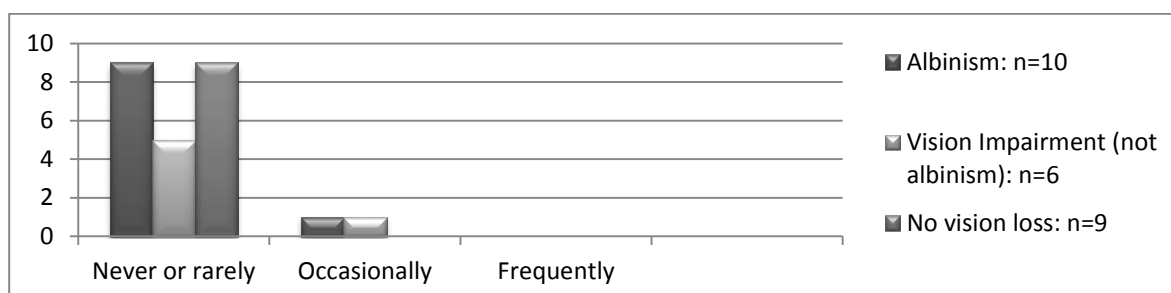


**Figure 4: Percentage of students by category (albinism, vision impairment but not albinism, no vision impairment) and rate of response, who argue, fuss or talk back to the teacher (N=25)**

The data reveal that the students with albinism tended to argue, fuss or talk back to teachers, but only at an occasional rate compared with students with vision impairment (not albinism). However, the majority of students with no vision problems, according to their teachers, never argued, fussed or talked back to teachers.

Students fight physically with other students: Nine students (90%) with albinism never or rarely fought physically with other students. When compared with the data on students with vision impairment (not albinism) and students with no vision loss, it was found that five (83%) students with vision impairment (not albinism) and nine students with no vision problems (100%) never or rarely fought physically with other students. In addition, while one student (10%) with albinism occasionally fought physically with other students, so did one student (17%) with vision impairment (not albinism).

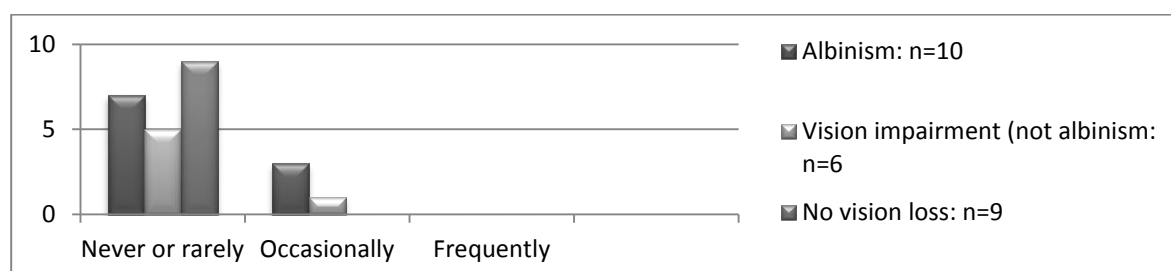
Figure 5 clearly indicates that the majority of student participants (23 out of 25, or 92%) in this study did not fight physically with other students. Although a small majority of students with albinism and students with vision impairment (not albinism) did fight with their peers, children with no vision loss were perceived by their teachers never to do so.



**Figure 5: Percentage of students by category (albinism, vision impairment not albinism, no vision impairment) and rate of response, who fight physically with other students (N=25)**

Students fib or lie to other students: Seven children with albinism, that is 70% of that group, never or rarely fibbed or lied to other students, according to their teachers. By comparison five children with vision impairment but not albinism (83%) and nine with normal vision (100%) never or rarely fibbed or lied to other students.

The findings indicate that the majority of students from all three groups who participated in this study (21 out of 25, or 84%) did not lie to other students. This information is presented in Figure 6.



**Figure 6: Percentage of students by category (albinism, vision impairment but not albinism, no vision impairment) and rate of response, who fib or lie to other students (N=25)**

In summary, the section of the Social-Emotional Dimension Scale that focused on aggressive interaction produced mixed results. The majority of students with albinism did not argue, fuss or talk back to other students, although they were inclined to do so with their teacher, but not frequently. They did, however, tend to do things at least occasionally that annoyed or bothered both their peers and their teachers. They had a very low incidence of fighting with other students and, although the percentage was low, some students did fib or lie to peers.

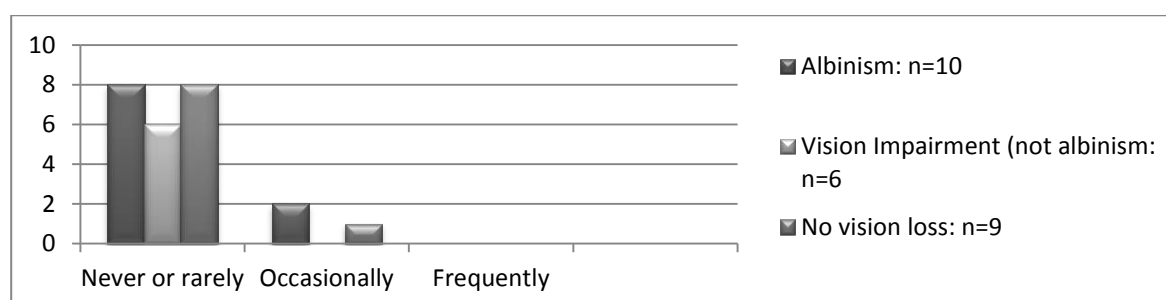
When the findings were compared with those from students with vision impairment (not albinism) and students with no vision loss, it was found that although students with albinism were not inclined to argue, fuss or talk back to other students they did do things, at least occasionally, that annoyed or bothered both their peers and also their teachers. The majority of students with albinism argued, fussed or talked back to teachers occasionally and their peers with vision impairment (not albinism) did so either occasionally or frequently. On the other hand most of their sighted peers never behaved in this way towards teachers. In addition, according to their teachers, students with albinism like the students in the other two groups had a very low incidence of physically fighting with other students. Although students

with albinism occasionally lied or fibbed to their classmates, so did their peers with vision impairment (not albinism), whereas the students with no vision problems, according to their teachers, did not fib or lie to other students.

### DEPRESSIVE REACTION

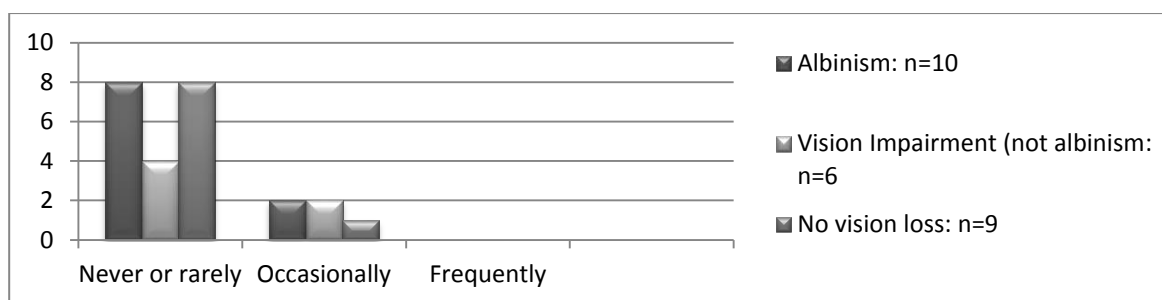
Class teachers were asked to rate the fifth section of the SEDS questionnaire according to the following four categories, indicating whether the stated behaviour was observed never or rarely, occasionally, or frequently. The categories, student writes, draws, or talks about sad subjects; student says derogatory things about self; student has the “blues” (eg looks gloomy); student has sad, dismal facial expression provided the following results.

Students write, draw, or talk about sad subjects: This item is based on the assumption that behaviour is a consequence of thoughts and feelings. Observations from school personnel (classroom teachers) who had the opportunity to view the students in various settings over at least a school term provided the following results. Students with albinism were only minimally more likely than their peers with vision impairment (not albinism) and no vision problems to write, draw or talk about sad subjects. Eight students (80%) with albinism, six students (100%) with vision impairment (not albinism), and eight (89%) students with no vision problems never or rarely wrote, drew or talked about sad subjects. Two students (20%) with albinism and one with no vision impairment (11%) did so occasionally, and no student was reported by their teachers to demonstrate this aspect of depressive reaction frequently. The results of this item are displayed in Figure 7.



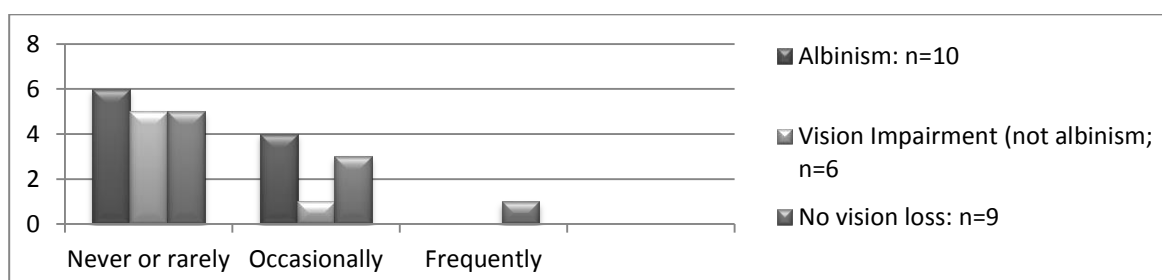
**Figure 7: Teachers' reports showing the number of students with albinism, students with vision impairment (not albinism) and students with no vision loss who write, draw or talk about sad subjects never or rarely, occasionally or frequently (N=25)**

Students say derogatory things about self: This item on the SEDS provides an indication that a child may be at risk of depressive reaction or have behavioural problems that may interfere with learning outcomes and social interaction. This item is another indicator of a child's perception of him/herself. Teachers' reports showed that a small percentage of students with albinism say derogatory things about themselves. However, the evidence gauged from the teachers' reports on students with vision impairment (not albinism) and students with no vision loss showed that students with albinism were very slightly more likely to exhibit this behaviour than their sighted peers, and slightly less likely than their peers with vision impairment (not albinism). Although eight of the ten students (80%) with albinism never or rarely said derogatory things about themselves, four students with vision impairment but not albinism (67%) and eight of the nine students with no vision problems (89%) never or rarely exhibited this behaviour either. The remaining students, two (20%) with albinism, two with vision impairment but not albinism (33%), and one with no vision problems (11%) exhibited this behaviour occasionally, and none was assigned to the category of frequently. Figure 8 depicts these results graphically.



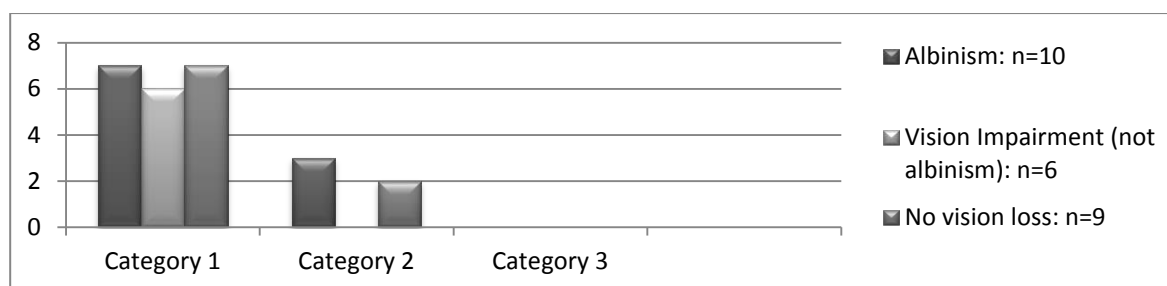
**Figure 8: Number of students by category (albinism, vision impairment but not albinism, no vision impairment) who say derogatory things about themselves: never or rarely, occasionally or frequently (N=25)**

Students have the “blues”: In rating item 24 of the SEDS questionnaire, teachers indicated that six (60%) of the ten students with albinism never or rarely looked gloomy or had the “blues”. The results show that students with albinism were more likely to have the blues than students with vision impairment (not albinism) and slightly less likely than students with no vision loss. Six (60%) of the albinism group never or rarely had the “blues” compared with five (83%) of the six students with vision impairment (not albinism) and five (56%) with no vision loss. Four students (40%) with albinism one student with vision impairment but not albinism (17%), and three (33%) with no vision problems had the “blues” occasionally. Only one student (11%) was identified as frequently exhibited this behaviour. This student had no vision impairment. The findings on this item are presented in Figure 9.



**Figure 9: Number of students by category (albinism, vision impairment but not albinism, no vision impairment) who have the “blues” (looks gloomy): never, occasionally or frequently (N=25)**

Students have sad, dismal facial expression: As seen in Figure 10, the majority of students with albinism never or rarely presented with a sad, dismal facial expression. The findings were similar for their sighted and vision impaired (not with albinism) peers. Seven students (70%) with albinism, six students with vision impairment but not albinism (100%) and seven students with no vision impairment (78%) were in this category. Three students (30%) of the ten with albinism and two of the nine with no vision impairment (22%) occasionally had sad, dismal facial expressions, according to their teachers. No student was observed to present with this type of facial expression frequently. In summary, students with albinism were more likely to exhibit a sad, dismal facial expression occasionally than their peers in the other two groups.



**Figure 10: Number of students by category (albinism, vision impairment, but not albinism, no vision impairment) who have a sad dismal facial expression never, occasionally or frequently (N=25)**

On the whole, students with albinism did not write, draw or talk about sad subjects; neither did the majority present with sad, dismal facial expressions. In these two areas there were only minimal differences between the behaviour of students with albinism and their sighted peers. Students with albinism, however, were less likely to say derogatory things about themselves than students with vision impairment (not albinism), but minimally more likely than children with no visual problems. In addition, teachers' reports indicated that students with albinism were more likely to have the blues than students with vision impairment (not albinism) and slightly less likely than students with no vision loss.

### **AGGRESSIVE INTERACTION**

Overall, the majority of students with albinism did not interact aggressively, although in some of the aspects of aggressive interaction studied they were more inclined to act assertively than children with vision impairment (not albinism) and students with no vision problems. Teachers reported on whether children with albinism argued, fussed, or talked back to other students or teachers, whether they did things that bothered other students or their teachers, whether they fought physically, and whether they fibbed or lied to other students.

The findings revealed that the majority of students did not argue, fuss or talk back to other students very often. In fact, 60% never or rarely did, but they were inclined to argue, fuss, or talk back to the teacher occasionally. A small majority of students with albinism also did things that occasionally annoyed or bothered other students and a larger majority occasionally bothered teachers. Students with albinism (90%) never fought physically with other students, and the majority never fibbed or lied to other students. The findings also revealed that students with albinism were less likely to argue, fuss to talk back to students, than children with vision impairment (not albinism) and children with no vision problems. However, they were more likely to annoy or bother other students and teachers, argue, fuss to talk back to teachers, and fib or lie to other students than their peers in the other two groups. They were also slightly more likely to fight physically than students with no vision impairment, and slightly less likely (one student difference in each case) than students with vision impairment.

### **DEPRESSIVE REACTION**

Students with vision impairment did not exhibit any aspects of depressive reaction to a large degree. A minority occasionally looked gloomy, had the blues, or presented with a sad dismal facial expression, but the majority did not display these depressive reactions, neither did they write, draw or talk about sad subjects, or say derogatory things about themselves. Minimal differences were noted when these findings were compared with those of their peers with vision impairment (not albinism) and children with no vision loss. An analysis of the teachers' reports showed that children with albinism were less inclined to say derogatory things about themselves than children with vision impairment (not albinism), and slightly more liable than sighted students.

## DISCUSSION OF FINDINGS

This study was limited by the size and nature of the group of students under investigation. Studies of small populations, however, generate insights into factors related to those groups, and enable more intensive study that captures first hand, multiple realities of situations, dynamics, interactions and behaviours as they occur in “real world” settings.

The purpose of this investigation was to address a gap in the research literature on the social-emotional development of children with albinism. Albinism has an emotional impact on a child which varies at different stages of development (NOAH, 2002). Mostow, Izard, Fine, and Trentacosta (2002) add that there is a link between emotions and the development of appropriate social interactions and peer relationships. They comment that the “formation of adaptive intersystem connections between emotions and cognitions enables appropriate activation, modulation, and utilisation of emotions, which are essential to healthy social transactions and the development of social bonds” (Izard, 2001, cited in Mostow et al., 2002, p. 1775). Similarly Denham et al. (2003) link social competence strongly with emotional competence and specify that three variables relating to emotional competence underpin social competence: “emotional expressiveness”, “emotion knowledge”, and “emotion regulation” (p. 251). They see anger as detrimental to social competence and likely to result in hostile reactions to others, and sadness making effective interaction more difficult.

The results of this study contribute to the body of knowledge on the social-emotional development of children with albinism. The findings derived from the teachers’ responses to two areas of social-emotional development, aggressive interaction and depressive reaction, of the Social-Emotional Dimension Scale, showed that overall this group of 10 students with albinism did not interact aggressively, nor did they exhibit significant depressive reaction. The findings are discussed below.

It is evident that albinism has some effect on the social-emotional development of children as found in this study. It must be acknowledged, however, that the group of students investigated were more like than different to their peers in terms of aggressive and depressive reactions as measured by the SEDS. While the data indicates that the participants with albinism were slightly more likely to display some aspects of aggressive interaction than their peers with vision impairment (not albinism) and the students with no vision loss in this study, this cannot be attributed solely to their albinism. Rather it seems that such factors as their degree of vision loss, their maturity, the context in which they operate and personal factors such as self-esteem, experiences and personality characteristics also have an impact and cannot be ignored. Waugh (2002 in NOAH, p. 3) states that “Emotional responses to albinism will occur throughout life because of the many challenges and frustrations the condition presents and the many societal influences” that occur in a child’s daily interactions. Kim (2003) agrees, observing that aggressive behaviour relates to peer rejection, and withdrawn behaviour relates to peer neglect. Research on Psychological and Personal Aspects of Albinism by Estrada-Hernández and Harper (2007) added that people with albinism experienced many physical, emotional and social challenges and struggle with the social impact of the physical differences associated with this condition.

The findings of this study produced evidence that most of the 10 students with albinism who participated did not fight physically with other students and neither did the major proportion of their two groups of peers. Research by Javangwe and Mukondyo (2011) on “the interactive play behaviours between children with albinism and their siblings and children without albinism and their non-albino siblings” reports that children with albinism presented with less aggressive behaviours than the children without albinism. They propose that while aggressive play behaviours facilitate the growth of gross and fine motor development (Smith, 1997, cited in Javangwe & Mukondyo, 2011) “children with albinism face problems in engaging much in aggressive behaviours due to their poor eyesight and delicate skin” (p. 1605). In addition

studies (eg Stewart & Keeler, 1965, cited in Estrada-Hernández & Harper, 2007, p. 266) suggest that “persons with albinism present a passive-dependent orientation”, whereas Ezeilo (1989, cited in Estrada-Hernández & Harper, 2007) reports that the personality characteristics of people with albinism in vary from passive to aggressive.

This study also exemplified that in most areas of depressive reaction, there were minimal differences between the participants with albinism and their peers in the other two groups. Of all the aspects examined, looking gloomy or having the “blues” was the one that a minority were more likely to present with. Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major and Queenan, (2003) note that “feeling good” (p. 251) assists ongoing social interaction, makes it easier for the child to enter and engage in peer interactions, and signals a child who is more likely to interact positively and be liked by others. They see anger as detrimental to social competence, and likely to result in hostile reactions to others, and sadness making effective interaction more difficult. They point out that “more positive individuals are like ‘interaction magnets’” (p. 251) in the way others are attracted to them.

## CONCLUSION

The examination of the social-emotional development of 10 children with albinism provides new insights into the factors that have the potential to affect the way these young people relate to others, establish friendships, make connections with peers and understand the world in which they live. These findings, however, must be treated with reservation. Conclusions refer only to the participants in this study and not to children generally. Because of the low number of students with albinism studied, generalisation to larger groups cannot be made from these results.

The literature emphasised the critical role social-emotional development plays in all aspects of a child’s interactions with peers and claimed that children who control their emotions are perceived as more socially competent than those who do not. Clearly poor vision can lead to social problems, such as non-acceptance, difficulty in sustaining relationships, and attitudes of pity and overprotection from others. It also has the potential to lead to emotional reactions such as a sense of inferiority, lack of hope, loneliness, denial, anxiety, and depression.

## FUTURE POSSIBLE RESEARCH

Haefemeyer and Knuth (1991) recognised that albinism affects the social-emotional functioning of persons with this condition, as well as their entire family. The lack of research into the psychosocial aspects of albinism was highlighted by authors. Some general information exists on the National Organisation for Albinism and Hypopigmentation (NOAH) website, but apart from the study by Waugh in 1988, and her article on the NOAH website (2002) there has been very little investigation into this area. Since it has been acknowledged in the broader literature that albinism has a social-emotional impact on children with this condition (NOAH, 2002) An Australia wide replication of this study would provide useful information for educators, and other professionals. It would also add to the understanding of the ways albinism affects the social-emotional development of these children and this information could well assist in the development of social skills programs.

## REFERENCES

- Anderson, D.W., & Overdof, M. (1991). Behavioral variations among special populations. U.S. Department of Education: Office of Educational Research and Improvement. Education Resource Information Centre (ERIC).
- Bellanti, C.J., & Bierman, K. L. (2000). Disentangling the impact of low cognitive ability and inattention on social behaviour and peer relationships. *Journal of Clinical and Child Psychology*, 19(1), 66-75.

- Ben-Zur, H., & Debi, Z. (2005). Optimism, Social Comparisons, and Coping with Vision Loss in Israel. *Journal of Visual Impairment and Blindness*, 99(3).
- Campbell, J. (2007) Research Report: Understanding the emotional needs of children who are blind. *Journal of Visual Impairment and Blindness*, 101(6), 351-355.
- Denham, S.A., Blair, K.A., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., & Queenan, P. (2003). Preschool emotional competence: Pathway to social competence? *Child Development*, 74(1), 238-256.
- Ezeilo, B. (1978). Validating Panga Munthu test and Porteus Maze test (wooden form) in Zambia. *International Journal of Psychology*, 13(4), 333–342.
- Estrada-Hernández, N., & Harper, D.C. (2007). Research on Psychological and Personal Aspects of Albinism: A Critical Review, *Rehabilitation Psychology*, 52(3), 263–271.
- George, A.L., & Duquette, C. (2006). They psychosocial experiences of a student with low vision. *Journal of Visual Impairment and Blindness*, 100(3), 1-18.
- Guralnick, M.J. (1991). The next decade of research on the effectiveness of early intervention. *Exceptional Children*, 58(2), 174-183.
- Haefemeyer, J.W., & Knuth, J.K. (1991). Albinism. *Journal of Ophthalmic Nursing and Technology*, 10(2), 55-62.
- Hooper, S.R. & Umansky, W. (2009). *Social and Emotional Development in Children with Sensory Impairment*. Needham Heights: Pearson Education.
- Javangwe, G., & Mukondyo, R.Z. (2011). A comparison of the interactive play behaviours between children with albinism and their siblings and children without albinism and their non-albino siblings, *Early Child Development and Care*, 182(12), 1593-1610.
- Karlsson, JS. (1998). Self-reports of psychological distress in connection with various degrees of visual impairment. *Journal of Visual Impairment and Blindness*, 92(7), 483-490.
- Knight & Hughes (1995) Ophir-Cohen, M., Ashkenazy, E., Cohen, A., & Tirosh, E. (2005). Emotional status and development in children who are visually impaired. *Journal of Visual Impairment and Blindness*, 99(8).
- Mostow, A.J., Izard, C.E., Fine, S., & Trentacosta, C.J. (2002). Modeling emotional, cognitive, and behavioural predictors of peer acceptance. *Child Development*, 73(6), 1775 – 1787.
- Roe, J. (2008). Social inclusion: meeting the socio-emotional needs of children with vision needs. *British Journal of Visual Impairment*, 26, 147-158.
- Sacks, S.Z. (2006). The importance of peers and role models. In S.Z. Sacks and K.E. Wolfe (Eds.). *Teaching social Skills to students with visual impairments: From theory to practice*. New York: AFB Press.
- Smart, D., & Sanson, A. (2001). *Children's social competence*. Australian Temperament Project 1983-2000. Melbourne: Australian Institute of Family Studies.
- Steffens, M.C., & Bergler, R.B. (1998). Blind People and Their Dogs: An empirical study on changes in everyday life, in self-experience, and in communication. In D.C. Wilson and D.C. Turner (Eds.), *Companion Animals in Human Health* (p.149-158). California: SAGE Publications.
- Taffe, R., & Smith, I.D. (1994). Behavioural and cognitive approaches to social skills training with young children. *The Australasian Journal of Special Education*, 18(1), 26-35.
- Waugh, MS. (1995-2002). Social aspects of albinism. The National Organization for Albinism and Hypopigmentation (NOAH). [Online]. Available from <http://www.albinism.org/publications/social.html>.



# The Importance of Braille in the 21st Century

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## ABSTRACT

Approximately 200 years ago Louis Braille devised the Braille code in order to make his life easier as a blind person. This code has given millions of blind users access to education, employment and life. In today's modern world of technology is there still a place for Braille? There has been a decline in the use of Braille in recent times but this could be a result of many factors. Technology can actually enhance the use of Braille and connect users to the same technology as their sighted peers, increasing the opportunities for a more enriched life. There need to be more trained teachers who can pass on their knowledge and understanding of the Braille system to ensure that all blind people have the same opportunities as those who are sighted.

## HISTORY

An eleven-year-old blind boy named Louis Braille, who lost his sight at the age of three had become frustrated with the cumbersome raised letter alphabet used for reading and writing (CNIB, 2013) so took matters into his own hands and was responsible for devising the Braille code. He took a military code originally used by soldiers for communication at night and adapted the 12 dot code to a six dot code (Brailleworks, 2013; AFB, 2011). Each Braille cell still consists of 6 dots arranged in 2 columns of 3; there are 64 combinations of dots used in Braille (Duxbury, 2013).

Using Braille meant that someone who was blind could achieve literacy and as recently as the 1960's was the main means of doing so (Sullivan, 2013). Louis printed the first Braille book in 1829 at 15 years of age and later; in 1837 he added symbols for music and maths. However, Braille usage was not really common internationally until 1868 (AFB, 2011).

When the braille code was first devised, uncontracted Braille (Grade 1) was used. It consisted of letters, punctuation, numbers and some symbols; all words were spelled in full and the result was large books of Braille, which took a long time to produce. Contracted Braille (grade 2) mostly used today consists of 189 contractions, and, although more difficult to learn, the result is shorter, easier to produce books, resulting in better access to reading material for Braille users (RIDBC, 2013).

The delivery of Braille teaching has certainly changed since its earliest inception in the 1800's. Specialised schools were the main setting for learning Braille for blind students then, and during this time trained teachers were employed to teach Braille as they had the specialist skills and experience required to do so. In 2014, approximately 70-95% of students with a vision impairment are taught in mainstream schools (statistics are American) with less time spent on learning Braille (D'Andrea, 2010).

The Braille Authority of North America (BANA), to reflect the changes occurring in the English language (Risjord, 2014), developed unified English Braille (UEB) in the early 1990's; the design of the code was to align Braille more with print (Cryer, Horne & Osborne, 2013). In 2004 the International Council on English Braille (ICEB) declared that UEB could be recognised as an international standard and individual countries could adopt it for use (ICEB, 2014).

South Africa adopted UEB in May 2004 followed by Nigeria February 2005, Australia May 2005 and New Zealand November 2003. In all of these countries UEB was implemented over a number of years with implementation processes individualised to each country. For example, in Australia the implementation process took five years (Cryer et al., 2013).

UEB has been adopted in the following countries, Canada, United Kingdom, Ireland and the United States of America but has yet to be implemented although the United States of America have a planned implementation date of January 2016 (Australian Braille Authority, 2014).

### **THE SIGNIFICANCE OF BRAILLE**

A person who is blind may choose to use Braille in order to communicate, to access information, educational programs and future employment and to participate in general daily living activities (ATCB, 2013). For many blind students Braille enables access to literacy in the same way that print does for sighted students; it also encourages and develops independence. It has been suggested that the younger a person is when they begin to use Braille the easier it is for them (Sanspre, 1998).

Braille gives users an opportunity to learn spelling, punctuation and a general understanding of the way text is formatted on a page. Listening to audio books, while relevant to literacy, does not provide such an opportunity. Being able to read Braille also provides the user with a greater chance of securing employment. With the advancement of technology for blind and vision impaired individuals, instead of Braille being a barrier to learning it is now becoming a more user-friendly medium for learning, literacy and furthering educational and employment opportunities (Chaudhuri, 2012).

Parents and team members working with students who have a severe vision impairment are often faced with a choice regarding the appropriate literacy medium to use. A number of factors need to be considered before determining whether or not Braille is the most suitable choice (Lavigne & Adams, 2003). It is recommended that students for whom a decision must be made, undertake a Learning Media Assessment (LMA) to gain more accurate information leading to a better-informed decision. The LMA will provide information about sensory efficiency, the types of learning media used by the student and the literacy medium the student will use (Koenig & Holbrook, 1993).

Braille will be the most likely preferred choice for a student who has a deteriorating eye condition, who can use their tactual sense efficiently or would be able to with training, and has no other disability that would prevent them from being a Braille user (Lavigne & Adams, 2003; Koenig & Holbrook, 1993). Before Braille can be learned, the student needs to have good tactual discrimination skills and the physical ability to actually perform the task of Braille writing (Reed-Brown & Palmer, n.d).

Once the literacy medium has been determined through initial assessments, the decision is not necessarily final, it can allow for future change. Many students who use Braille also use other forms of literacy access including audio books (Lavigne & Adams, 2003) and screen reader programs via computer.

Teaching Braille with a class or small group (of sighted learners) can encourage social interaction, provide opportunities for discussion and gives the sighted student another skill (language) they can share with others. The Braille user may also be more motivated to learn (Swenson, 2012). Braille can be taught in a functional way through the use of a Braille labeller. If used at home the whole family can be a part of the Braille learning journey without making it too onerous. Labels can be made for the classroom when other students can learn incidentally

also (Swenson, 2012). Braille is also used on such recreational and practical equipment as games, watches, playing cards and thermometers (CNIB, 2013), defining its versatility for use and not just for accessing reading and writing.

### **FACTORS THAT IMPACT ON BRAILLE USE**

As recently as a couple of decades ago, Braille use appeared to be on the decline. A number of factors may have contributed to this including changes in educational settings for students who are blind, from specialised schools to mainstream settings (D'Andrea, 2010) as well as such new technology as screen readers and audio books (Samuels, 2008).

Some limiting factors to using braille in the past are no longer applicable. Once, it used to take so long to produce a braille book, that few usable resources were available especially textbooks for students (Samuels, 2008). Technological advances have ensured that a resurgence of Braille use can be possible. Braille books can be produced at a much faster rate and can cover so much more in the way of topics for students and Braille users in general. Refreshable Braille displays let the user connect to the world in almost the same way computer users can; they can even be connected to computers to enhance their use and output. Braille can continue to be an important way to encourage the development of literacy skills for students who are blind (Samuels, 2008).

For some children who are blind, learning to use Braille as a medium for literacy will be an easy process much like learning to read and write is for a sighted child. Readers of print and readers of Braille may even progress through similar stages (Steinman, LeJeune & Kimbrough, 2006). Both types of learning are easier if children have experiences within their world on which to develop concepts, but for a child who is blind it can be more difficult as they need to be given the experiences, which may not always happen. A variety of approaches for teaching literacy may be needed depending on the needs of the individual child but, generally, there is no particular reason why a blind child cannot develop his or her literacy skills in a similar way to a child who is sighted (Wormsley, 2004).

No matter what approach is used, for some, learning Braille will be a difficult process that is full of obstacles. Students learning Braille may have multiple disabilities including developmental delays, cognitive impairments and physical disabilities. Rather than giving up on these children for fear of their not being able to learn, adaptations to teaching need to be made, just as they would for a sighted child. A functional approach may be more appropriate incorporating the learning of Braille into daily life skills programs and use vocabulary the child frequently uses or hears (Wormsley, 2004). If a child needs Braille to be their literacy medium then a solution to removing barriers to learning can be sought.

Many students and adults who are blind use multiple tools to complete their work, including the use of Braille in paper format. Some have access to books both in Braille and electronic formats although electronic books are often the preferred choice for general literacy for some. Braille is often preferred for work requiring the use of tables and charts including maths and science. Generally, however, if a student is proficient in the use of braille and accessing electronic devices they are able to select which 'tool' they use, depending on the task it is required for (D'Andrea, 2010). Therefore, for a student who is blind, Braille is still an important tool for gaining access to the curriculum.

### **BARRIERS TO TEACHING BRAILLE**

Since the 1970's, with the move to including students with disabilities (including vision impairment) in mainstream schools, specific instruction pertaining to individual needs, including the teaching of Braille, can be difficult (Gale, n.d). Good teachers are essential to the provision of education programs that meet the needs of individuals (Ainscow, 2008), but they

cannot be skilled in everything. Unlike reading and writing for sighted children, the mainstream 'general' teacher cannot teach Braille literacy. It is a specialist subject similar to learning a foreign language. Therefore, a teacher must have comprehensive knowledge of that language if they are to be an effective teacher (Gale, n.d).

A teacher of Braille must be trained and have reached proficiency as a Braille user. They must also have an understanding of what is required to teach Braille and for whom Braille would be best suited (Gale, n.d; Rex, Koenig, Wormsley & Baker, 2008). An itinerant teacher, while they might be competent as a Braille user, may only visit a student once or twice a week for a short period of time. This amount of time is seldom enough to provide sufficient instruction to the student in Braille literacy (Gale, n.d). Their role, therefore, may be as an advisor and mentor to a teacher aide or support person who is constantly working with the student. The visiting teacher may also need to mark and correct the students' work. Some have blamed the infrequency of visits and lack of time to provide thorough teaching as being responsible for the decline in using Braille (D'Andrea, 2010).

In 2009 it was determined that there was a Braille literacy crisis in America with approximately 90% of young blind children with literacy problems because of the inability to access Braille. American researchers identified a shortage of trained teachers as a barrier to students learning Braille, but also suggested that there are misconceptions about the use of Braille. Some misconceptions include the notion that Braille isolates students and makes them different to their peers, or that Braille is much slower to use than reading print. Perhaps it would be slower for a sighted child, but for a child who is blind, reading print is not an option. Ideas to reverse the decline include the increase of access to braille media, researching new ways to teach Braille, educating the general public on the benefits of Braille and making sure all Braille teachers have passed some sort of National proficiency (National Federation of the Blind, Jernigan Institute, 2009).

### **THE ROLE OF THE RESOURCE TEACHER OF VISION (RTV)**

One of the roles of an RTV is to enable the learners on their roll to reach their potential for growth, independence, participation and success within their communities. Underpinning this role is the belief that the learners have unique needs that require specialist teaching and learning approaches (Prskawetz, 2013).

It is the responsibility of the RTV to use the most effective available teaching strategies based on current research that will enhance student learning. This may mean seeking out professional development or working on the skills necessary to teach Braille. It is expected that the student will be able to use appropriate technology and, if not experienced themselves, to provide opportunities for the student to learn perhaps from someone who is skilled (BLENNZ, 2013).

The RTV can be a team member as part of the process to determine a child's readiness and appropriateness for Braille learning; they could carry out the Learning Media Assessment. It is essential that a child has the skills necessary to learn Braille, and the RTV could be responsible for the teaching of these skills. The child needs to have good tactual discrimination and finger dexterity before the actual teaching of reading and writing skills (Wormsley, 2004) and the RTV can identify which are appropriate to teach, through assessment.

An individual education plan (IEP) will require the student to have goals to work towards, but also, the support needed to achieve the goals including equipment and training (Waldron & Steer, n.d). Within the plan for a blind child could be a goal of learning Braille as part of their access to literacy achievement. The IEP is a contract, which then becomes the responsibility

of the classroom teacher and the specialized teacher (RTV), as well as other necessary team members, including parents, to ensure that it gets carried out.

The RTV plays an important role within the team to ensure that a child who is using Braille as their literacy medium (or part of) has access to appropriate tools and training. For example, most, if not all, RTV's in New Zealand are Braille proficient, (or are completing the specialist teaching course to be so), and therefore have the knowledge and understanding to assist a blind child and their support team to learn Braille (BLENNZ, 2013).

As mentioned earlier, the role of the RTV, or itinerant teacher, may be to facilitate training and mentoring for those who are working closely with the student and to check completed Braille work. It needs to be noted that it can be commonplace for students to learn on their own and older students in particular see the RTV as being responsible as facilitators rather than teachers (D'Andrea, 2010).

## **FUTURE DEVELOPMENTS**

The Perkins Brailier, which is a 'basic tool' for learning Braille, has advanced in the technological world and Perkins have now developed the Smart Brailier, one that has a readable screen (for those who are sighted and working with the student) and audio feedback as well. The Smart Brailier can be used independently for the student to learn how to type in braille; although a sighted person can sit beside the learner to provide motivation and encouragement (Perkins, 2013); just one example of what can be developed to support the use of braille.

Technology gives students access to a wider range of options. It also makes students feel included and no longer different to their peers (Swenson, 2012).

People who are blind are able to communicate with their peers and others in the same way sighted people do, via e-mail, phone or social media sites. A person who is blind can use a refreshable Braille display to type a message that can be read in print by a person who is sighted.

Braille still remains as important to people who are blind as it did in the 1820's but with adaptations to the way it can be presented. As we move into the technological era a Braille user can interface their Braille with print with the boundaries between the two media becoming less. Print as a form of literacy has changed significantly whereas Braille has changed little (Braille Authority of North America, 2013).

Those who use a refreshable Braille display, are generally limited by the inability to read more than one line at a time. Kendrick (2013), suggest that in the future Braille users may be able to benefit from a unit that is able to read multiple lines enabling the user to gain a faster understanding of new concepts particularly in the fields of maths and science.

Blazie marketed the first personal notetaker in 1987 (Kendrick, 2013). He is also responsible for the design of the upcoming device ready at the time of writing, to hit the American market, and called the Braille to go (B2G). The new device will be able to operate using WIFI and Bluetooth connectivity and will enable the user to complete simple tasks of reading through to being able to map routes to get to desired destinations (Kendrick, 2013).

It is estimated that by 2015, students will be able to access educational tests in an electronic format; this means that blind students in order to be a part of a 'fair playing field' will require the same access. A prohibitive factor to the development of the needed technology is cost. Therefore, cost reduction ideas are being developed first, such as a relatively inexpensive (compared to other materials) alloy called Nitinol (Kendrick, 2013).

In 2012 the Centre for Braille Innovation developed a Braille display prototype using Nitinol and with five lines plus 40 braille cells (National Braille Technology, 2014). The final display is yet to be developed and who knows what it will look like or be able to do? It would seem that as technology advances so do the opportunities for creating unlimited access for users of Braille. Once the basic skills of reading and writing Braille are taught (starting young is good), the Braille user can work alongside their sighted peers both in education and employment. The role of the RTV and the classroom teacher in the initial stages of learning are vital to ensure success for the child in the present and in the future. Braille gives access to the world for the individual who is blind.

## REFERENCES

- Adaptive Technology Center for the Blind (ATCB). Retrieved from [www.sympatico.ca/tamru/resource/BrailleSignificance.html](http://www.sympatico.ca/tamru/resource/BrailleSignificance.html).
- AFB (2011). Louis Braille Biography. Retrieved from [www.braillebug.org](http://www.braillebug.org).
- Ainscow, M. (2008). Teaching for diversity: The next big challenge. In F.M. Connelly (Ed.), *The Sage handbook of curriculum and instruction*. Los Angeles: Sage Publications Inc.
- Braille Authority of North America. (n.d.). Evolution of Braille Part 1. Retrieved from [www.brailleauthority.org](http://www.brailleauthority.org).
- Brailleworks (2013). Retrieved [www.brailleworks.com](http://www.brailleworks.com).
- Chaudhuri, S. (2012). Why is Braille important today? Retrieved from [www.nationalbrailleweek.org](http://www.nationalbrailleweek.org).
- CNIB. (n.d.). About the braille system. Retrieved from [www.cnib.ca](http://www.cnib.ca).
- CNIB. (n.d.). Braille Literacy. Retrieved from [www.cnib.ca/en/living/braille/literacy](http://www.cnib.ca/en/living/braille/literacy).
- D'Andrea, F.M. (2010). *Preferences and practices among students who read braille and use assistive technology*. Pennsylvania, University of Pittsburgh.
- D'Andrea, F.M. (2012). Preferences and practices among students who read braille and use assistive technology. *Journal of Visual Impairment and Blindness*.
- Gale, G. (n.d.). *In Australia Braille literacy matters*. North Rocks NSW: RIDBC Renwick Centre.
- Kendrick, D. (2013). More than a line: What the future holds for refreshable braille. *AFB Accessworld Magazine*.
- Koenig, A., & Holbrook, M. (1993). *Learning Media Assessment of students with visual impairments: A resource guide for teachers*. Austin, USA: Texas School for the Blind and Visually Impaired.
- Lavigne, E., & Adkins, A. (2003). Braille/print literacy issues and the Learning Media Assessment. Retrieved from [www.tsbvi.edu/resources](http://www.tsbvi.edu/resources)
- National Federation of the Blind. (2009). The Braille literacy crisis in America: Facing the truth, reversing the trend, empowering the blind. A Report to the Nation: Executive Summary. Baltimore, ND: NFB.
- Perkins Smart Brailier. Retrieved from [www.perkins.org](http://www.perkins.org).
- Reed-Brown, C., & Palmer, P. (n.d.). Pre-Braille curricula: Preparing the child who is blind to read. Retrieved from [www.pathstoliteracy.org](http://www.pathstoliteracy.org).
- Rex, E., Koenig, A., Wormsley, D., & Baker, R. (2008). *Foundations of braille literacy*. New York: AFB Press.
- RIDBC. (2013). Contracted Braille. Retrieved from [www.ridbcrenwickcentre.com](http://www.ridbcrenwickcentre.com).
- Samuels, C. (2008). Braille makes a comeback. *Education Week*, 27(43), 27-29.
- Sanspre, M. (1998). Early literacy: Braille and the young child. Retrieved from [www.tsbvi.edu](http://www.tsbvi.edu).
- Steinman, B., LeJeune, B., & Kimbrough, B. (2006). Developmental stages of reading processes in children who are blind and sighted. *Journal of Visual Impairment and Blindness*, 100(1), 36-46.
- Sullivan, J. (1996). What the future holds for braille. Retrieved from [www.duxburysystems.com](http://www.duxburysystems.com).
- Swenson, A. (2012). Beginning with Braille: Challenges and choices. NFB Braille Symposium.
- Waldron, K. & Steer, M. (n.d.). The spirit of inclusion. Retrieved from [www.trinity.edu/org/sensory/impairments](http://www.trinity.edu/org/sensory/impairments)
- Wormsley, D.P. (2004). *Braille literacy: A Functional approach*. USA: AFB Press.

# Young children who are congenitally blind's use of the QWERTY keyboard: A critical survey of the literature

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## ABSTRACT

The focus of this paper is to clarify current understanding in the research literature regarding the strategies and procedures children who are congenitally blind might apply, when given the opportunity to freely explore the QWERTY computer keyboard as novice computer users. A critical conceptual overview of the relevant research literature on the ways children who are congenitally blind locate and memorise the different keys on the keyboard is provided. The differentiation between (touch) typing and keyboarding skills is discussed, and the research areas are then detailed that may be involved in the development of these particular keyboarding skills. The paper concludes with a call for further research into the area, particularly into salient features on the keyboard as potential reference cues for haptic spatial coding.

## INTRODUCTION

Being able to accurately and efficiently use a computer keyboard to facilitate the use of assistive technology – as a tool to provide access to information - is an essential skill for students who are blind and one that is becoming increasingly more important (American Foundation for the Blind and Perkins School for the Blind, 2012; Bishop, 2004; Diggs, 2002; Knight, 2013; Presley & D'Andrea, 2008). Keyboarding and technology are included in the expanded core curriculum for students who are blind or vision impaired in Australia (Statewide Vision Resource Centre, 2013) and in the United States of America (USA) (American Foundation for the Blind and Perkins School for the Blind, 2012). In a national survey, Kelly (2009) found that the majority of students with vision impairment in the USA did not have the opportunity to use assistive technology, resulting in their falling behind their sighted peers. Kelly and Smith (2011) reviewed 45 years of English language research literature on the effectiveness of assistive technology as an educational intervention for students aged 3 – 21 years of age who are blind or have vision impairment, with or without additional disabilities. They noted that there is little evidence-based research on the strategies in the instruction and use of assistive technology of students who are blind or vision impaired. This type of research is necessary to be able to assess how effective the applied strategies are in those students' educational outcomes. This paper aims to contribute to the understanding of the strategies and procedures children who are congenitally blind might apply, when given the opportunity to freely explore the QWERTY computer keyboard as novice computer users.

Because vision impairment in children is a low-incidence disability, much of the research draws conclusions from small samples. Some studies make extravagant claims and there is a need to take care to consider them within a critical context. However, as there is no particular published research on this paper's subject, the literature described in this survey can hopefully still provide useful insights to inform future research.

## KEYBOARDING SKILLS

The terms (touch) typing and keyboarding are used inconsistently throughout the literature. The QWERTY keyboard takes its name from the six keys in the top row of letters. Although the keyboard is a device mainly developed for information input, it also provides tactile and audio feedback when a key is pressed (Stone, Jarrett, Woodroffe, & Minocha, 2005). Bishop (2004) has described typing both as a communication tool, and as a keyboarding skill for assistive technology use. According to McKinnon and Nolan (1990), keyboarding includes using such function keys as the Control and Alt keys and combinations of these. This skill primarily enables the use of such assistive technology as screen reading software. Finally, 'touch typing' is defined as typing accurately while not looking at the computer keyboard (McKinnon et al., 1990; Presley et al., 2008). Like their sighted peers, students who are blind are at some stage taught two-handed touch typing through the traditional method, positioning the fingers on the home row (Bishop, 2004; Knight, 2013; Presley et al., 2008; Stauffer, 2008). On a standard QWERTY keyboard, the home row keys are A-S-D-F, and J-K-L-;. In the Home position, the thumbs of both hands rest on the space bar. The literature provides no specific research data on what processes and strategies are involved in young children who are blind's learning of the concept, lay-out and use of the keyboard. However, the following differing opinions and considerations regarding certain aspects of keyboarding skills have been identified.

Most authors agree that the time to teach keyboarding is dependent on the individual. An assessment of the individual student's needs and skills is essential. (Bishop, 2004; Knight, 2013; Special Education Technology British Columbia, 1999). This may require a collaborative approach, including an occupational or physical therapist (Presley et al., 2008). The American Foundation for the Blind and Perkins School for the Blind (2012) advise that students who are blind or vision impaired should ideally be introduced to keyboarding skills well before they need to apply these skills at school, and well before their sighted peers. Diggs provides background for this notion:

Students who are blind or visually impaired must master keyboarding, windows concepts and controls, keyboard equivalents for mouse commands, their assistive technology, and the concepts needed to understand the software to be used prior to accomplishing the same tasks as their sighted peers. (Diggs, 2002, p. 7)

'Typing' is a specific use of the keyboard, for text entry. 'Keyboarding' is a more general definition of the interaction with the keyboard, which can include typing as well as the use of the keyboard as an interface with technology. Various essential prerequisite skills for the development of efficient keyboarding skills have been identified in the research literature (Bishop, 2004; Knight, 2013; Presley et al., 2008; Special Education Technology British Columbia, 1999), for example cognitive development, hand size and dexterity. Knight (2013) and Presley et al. (2008) propose that prior to students who are blind learning correct typing, they first need to explore the keys, and acquire pre-keyboarding skills. Keyboard awareness involves having a general knowledge of the key locations (Presley et al., 2008). Knight (2013) in her Early Learning Access Technology Framework for children who are blind or have significant vision impairment, introduces children from two to six years of age to keyboard awareness and navigation, after which they may progress to the early stages of touch typing. Bishop (2004), however, cautions that 'playing' with a computer keyboard can lead to the development of bad locating habits. Her comments were given in a reference to what in literature on mainstream touch typing courses is generally called 'hunt-and-peck strategies', which, it is claimed, are difficult to undo later on. There are no empirical data available on whether or not children who are blind can in fact develop hunt-and-peck strategies, generally understood to involve looking at the keys to seek out one key at a time, with one finger of each hand.



Divergent opinions also exist on the way locating and identifying the keys can be supported. Like Bishop (2004), Presley et al. (2013) state that tactual motor patterns of the hands reaching out to the keys need to be established in the brain through practice. Locator dots on specific keys can provide basic orientation cues to the keyboard (Knight, 2013; Presley et al., 2008). These are similar to a 2003 invention which places tactile 'bumps' on the letters F and J to help sighted typists know where exactly to place the fingers for better speed and accuracy of typing (Modified keys on a keyboard, n.d.). Hersh and Johnson (2008) promote the use of braille labels on the keys to provide tactual feedback about which keys are pressed when touch typing, however Presley et al. (2008) caution that such labels can become counter-productive and should only be used in the early learning stages. Stauffer (2008) utilises braille labels on the keyboard for students who are blind and have additional disabilities. In her whole-language approach to literacy, students learn to read un-contracted braille through learning how to type.

### **THE ROLE OF SIGHT IN SKILLED 'TOUCH TYPING'**

In recent years, a number of studies have examined the use of the standard QWERTY keyboard by skilled, sighted, adult typists, demonstrating that they have surprisingly little explicit knowledge of what their hands are doing, and proposing a two-loop hierarchical control model. The outer loop monitors the accuracy of keystrokes. The inner loop assigns letters to keystrokes and keystrokes to locations on the keyboard, and monitors proprioceptive and kinaesthetic feedback. (Crump & Logan, 2010; Liu, Crump, & Logan, 2010; Logan & Crump, 2009; Logan & Crump, 2011). Expert typists also appear to have poor explicit knowledge of the spatial layout of a QWERTY keyboard (Liu et al., 2010). Interestingly, these studies found that sight does play a role in the touch typing performance of skilled typists on a QWERTY keyboard, although, as previously indicated, touch typing is defined as typing without using sight. Not only do typists monitor the computer screen for words that show up incorrectly, but they also rely on visual perception of the keyboard to support their performance (Liu et al., 2010; Snyder, Ashitika, Shimada, Ulrich, & Logan, 2014; Tapp & Logan, 2011). In these skilled typists' studies the sighted participants could not see the keyboard. However, caution is needed against comparing research results from sighted cohorts (even when they are blindfolded) with people who are blind. Visual experience at some stage in life, even if a person is early-blind, makes a big difference (Millar, 2008). Similarly, although Snyder et al. (2014) emulated a 'novice' learning situation by presenting skilled, adult typists with an unfamiliar, non-QWERTY keyboard (Dvorak), it cannot be assumed that this is a real representation of the way children who are novice computer users interact with a keyboard. The researchers confirm this notion by stating that 'children who are just acquiring typing skills would differ from our adult experts in many ways' (Snyder et al., 2014, p. 168).

### **SERIAL MEMORY**

According to Raz, Striem, Pundak, Orlov, and Zohary (2007), people who are blind outperform sighted people in verbal serial memory tasks. Their study participants (19 people who were congenitally blind and 19 sighted people) were set the task to correctly recall long strings of words. Withagen (2014) found that children who are congenitally blind show superior performance to sighted children, in short term and long term verbal memory tasks. She suggests that children who are blind are being trained in serial memory skills more than their sighted peers. Children who are blind always have to memorise verbal input, which is inherently sequential, as well as practice the sequential tactile processing of braille. Anecdotal evidence from educators and therapists suggests that children who have learnt to read braille, also perform better in early keyboarding skills, using both hands on the keyboard.

Soechting, Gordon, and Engel (1996) compared the serial pressing of keys from piano playing and typing on a computer keyboard, by sighted adults, with varying levels of proficiency. The

learning of new typing skills was simulated by the introduction of a re-arranged computer keyboard. They concluded that typing involves sensory, cognitive, motor and language processes, and that the complex series of movements are made up of a strictly sequential sequence of less complex movements, with no look-ahead processing: “The demands of an upcoming movement do not alter the kinematics of the preceding movement” (Soechting et al., 1996, p. 358). They identified both similarities and differences between piano playing and keyboarding, but Lockhart and Zeitz (2012) found that any music experience, not limited to playing the piano, positively affected computer keyboarding skills in students aged 9-11 years who were given a four week keyboarding instruction program. They explained this by suggesting that both skills benefit from the instruction of fine motor skills. Finally, Theurel, Witt, Claudet, Hatwell, and Gentaz (2013) examined the effect of textures in tactile pictures on recognition accuracy by children who are early-blind. They found that early experience with tactile images and with braille supports the development of effective and efficient haptic exploratory procedures. Thus, as was suggested with serial memory, it appears that experience with certain skills can affect the acquisition of other skills that may involve similar processes.

### **HAPTIC EXPLORATORY PROCEDURES**

Active touch, involving conscious movement, was first described by Katz (1925) and is investigated as distinct to passive touch in Gibson’s seminal work (1962, cited in Heller & Gentaz, 2014). Haptic perception includes the two subsystems of the cutaneous sense and kinesthesia or proprioception (Pagliano, 2012; Sanders, 2008) and is a perceptual system involving exploratory or scanning procedures and movements (Lederman & Klatzky, 1987; Millar, 2008). Nevertheless possibilities exist to identify objects by a ‘haptic glance’, that is, a short contact with an object (Klatzky & Lederman, 1995). “Active touch can aim to obtain haptic ‘apprehension’: assessing object properties and understanding how they combine to produce the whole, as opposed to ‘recognition’, i.e., ‘categorization’” (Lederman et al., 1987, p. 344). Students who are blind must learn from part-to-whole, as they only experience discrete parts of an object, and as a result they have to memorise sequential input of small pieces of tactual information, and then piece the parts together, based on that information (American Foundation for the Blind and Perkins School for the Blind, 2012; Withagen, 2014). This process can require considerable time and effort (Jansson, 2008). Children who are blind and who are novice computer users can only build a complete understanding of the lay-out and structure of a keyboard one key at a time.

In their seminal work on haptic object recognition, Lederman et al. (1987) describe the sequential intake of information through purposive haptic “exploratory procedures or EPs, which are dictated by the object properties that the haptic system chooses to process, both perceptually and cognitively” (Lederman et al., 1987, p. 365). The six EPs they described and investigated are: “lateral motion”, “pressure”, “static contact”, “unsupported holding”, “enclosure” and “contour following”. They suggest that when an unfamiliar object is examined for the first time, the “enclosure” EP is best qualified to get a quick haptic glance, which could then be used to guide subsequent exploration. If something really stands out during this first exploration, this salient feature would then be further explored with the EP that is best specialised to achieve this. Klatzky, Lederman, and Reed (1987) investigated the circumstances under which four of the before mentioned EPs were used, and how haptic with and without visual exploration compared with each other in these tasks. Specific tasks and instructions regarding the exploration of object’s dimensions and properties showed to influence the outcome.

Kalagher and Jones (2011) studied haptic exploratory procedures in 3-5 year old sighted children, and found that they used the same hand movement patterns in matching tasks, as those used by adults. Withagen (2014) described the tactual functioning and EPs used by blind and sighted children through the Tactual Profile, an assessment tool designed to

evaluate the tactile skills of children from 0 – 16 years who are blind and have no additional impairments, with regard to tactile sensory functioning, tactile motor functioning, and tactile perceptual functioning. Withagen, Vervloed, Janssen, Knoors, and Verhoeven (2009) used the Tactual Profile instrument to study the EPs in haptic tasks of 48 children from the Netherlands, demonstrating that they master approximately 94% of tactual tasks they meet in everyday life, which enables them to execute the tasks they meet in mainstream education. At 5 and 6 years of age there may be a transition point in the control of tactual skills; children of this age-level only mastered on average 85% of tactual skills. Future research may be able to establish whether or not this finding impacts the learning of keyboarding skills by children of similar age.

## **COGNITIVE MAPS**

Tolman (1948) first introduced the term ‘cognitive maps’ to describe the mental representations of physical locations, to support the recall of important features of the environment. Based on such behavioural theories as in Lashley’s (1951) seminal paper on the problem of serial order in behaviour, which proposes that higher level cognitive processes construct detailed plans for action that are executed by the motor system, it could be argued that the ability to rapidly and accurately execute keystrokes is controlled by hierarchical, feed forward processes or plans. Crump and Logan (2010) challenged the idea “that an explicit cognitive map of key locations (which could be used to design such an action plan), is precise enough to support accurate typing” (p. 395). They demonstrated that the tactile, haptic, and proprioceptive feedback to the fingers from the keyboard plays an important role in supporting typing skills of skilled, sighted typists: the feel of the keys is important, and the resistance of the keys is important as well.

## **HAPTIC SPATIAL CODING**

To form an understanding and mental representation of the spatial lay-out of a keyboard, children who are blind need to use spatial coding, based on haptic exploration. Landau (1991), in an experiment with three children who were congenitally blind, investigated their construction of spatial relationships among object parts. She concludes:

Visual experience is not necessary for the early development of the capacity to explore objects or layouts, the capacity to assemble haptic and kinesthetic information about objects into a unified representation, or the capacity to transform these representations in ways important to human spatial cognition. (Landau, 1991, p. 176)

Reference cues play a crucial role in spatial coding of people who are blind (Millar, 2008). The tendency for children who are congenitally blind, is to use self-referent and movement coding strategies (Millar, 2008; Ungar, Blades, & Spencer, 1996). In her experiments with braille reading and processing of tactile maps, Millar (2008) demonstrated that spatial coding is a result of touch and movement, and that under pure haptic conditions it is possible to use external cues as reference anchors to code object locations in small, tabletop space, so not necessarily depending on egocentric referencing alone. In one of her experiments, braille readers explored with both hands the rectangular outlines formed by the raised layout of the brailled text, using that as an external spatial frame in combination with their body-centred reference. Millar (2008) notes that redundancy of reference cues is important, and ‘a salient feature within a shape can act as a reference cue relative to other features or to the total configuration’ (Millar, 2008, p. 43).

Children who are blind use different modalities of representation in spatial memory from sighted children (Millar, 1975). In a game-like experiment involving children who were congenitally or very early blind, and sighted children between approximately 6-12 years of age, she demonstrated that children who are blind use sequential information from touch and movements in spatial memory, as opposed to the visual imagery of sighted children. Verbal

labelling and repeated familiarization improved the accuracy of recall of spatial layouts. Younger children required specific instruction and encouragement to use this strategy.

Liu (2009) suggests that the same principles of Orientation and Mobility, regarding position, planning and routes in indoor and outdoor spaces, can be applied to the navigation of virtual space, in which the computer keyboard is used to detect and control objects. Liu et al. (2010) successfully applied findings from the large-scale space spatial memory literature regarding the use of references, to the small-space environment of a computer keyboard. They propose that “the rows and columns of the keyboard form the reference frame in which the spatial layout of the keys is encoded, with the up–down axis of the keyboard aligned with the front–back axis of the typist” (Liu et al., 2010, p. 475).

## INSTRUCTION AND PRACTICE

A common thread through the research literature appears to be that instruction and practice positively impacts on the learning outcomes of children who are blind. This applies to the learning of keyboarding skills (Bishop, 2004; Knight, 2013; Presley et al., 2008), the acquisition of haptic exploration skills and effective exploratory strategies (Berlá & Butterfield, 1977; Theurel et al., 2013; Withagen, 2008), accurate recall of spatial layouts (Millar, 1975), understanding tactile representations (Marek, 1997; Marek, 2000a), and conceptual understanding (Marek, 2000b). Diggs (2002) proposes a concept-based approach to teaching students who are blind about different elements of technology use, similar to hands-on teaching of real objects and elements in the child's environment.

## CONCLUSION

For a child who is blind, a computer keyboard represents opportunities as well as challenges. Current methods to introduce students who are blind to the QWERTY keyboard are not evidence-based, but rather based on assumptions and individual approaches from educators. Some of the research that has been conducted in other areas of interest can form a valid contribution to an increased understanding of keyboard access. However, in order to optimise educational outcomes and equal opportunities for students who are blind, there is clearly a call for evidence-based research into early computer use through the QWERTY keyboard by young children who are congenitally blind. Further research is warranted into salient features on the keyboard as potential reference cues for haptic spatial coding.

## REFERENCES

- American Foundation for the Blind and Perkins School for the Blind. (2012). Compensatory skills and the expanded core curriculum. Retrieved from <http://www.eccadvocacy.org/section.aspx?FolderID=13&SectionID=143&DocumentID=6098>
- Berlá, E. P., & Butterfield, L. H. (1977). Tactual distinctive features analysis: Training blind students in shape recognition and in locating shapes on a map. *The Journal of Special Education*, 11(3), 335-346. doi: 10.1177/002246697701100309
- Bishop, V. E. (2004). *Teaching visually impaired children*. Springfield, IL: Charles C. Thomas Publisher.
- Crump, M.J.C., & Logan, G. D. (2010). Warning: This keyboard will deconstruct – The role of the keyboard in killed typewriting. *Psychonomic Bulletin & Review*, 17(3), 394-399. doi:10.3758/PBR.17.3.394
- Diggs, J. (2002). Teaching computer skills to children with visual impairments: a concept-based approach. Paper presented at the 2002 Association for Education and Rehabilitation of the Blind and Visually Impaired International Conference, Toronto, Canada. Retrieved from <http://www.tsbvi.edu/training/1143-teaching-computer-skills-to-children-with-visual-impairments-a-concept-based-approach>
- Gibson, J. J. (1962). Observations on active touch. *Psychological Review*, 69, 477-491. doi 10.1037/h0046962
- Heller, M. A., & Gentaz, E. (2014). *Psychology of touch and blindness*. Psychology Press. Retrieved

- from <http://www.ebilib.com.au>.
- Hersh, M. A., & Johnson, M. A. (2008). Accessible information: an overview. In M. A. Hersh, & M. A. Johnson (Eds.), *Assistive technology for visually impaired and blind people* (pp 385-448). London, United Kingdom: Springer-Verlag. doi: 10.1007/978-1-84628-867-8.
- Jansson, G. (2008). Haptics as a substitute for vision. In M. A. Hersh, & M. A. Johnson (Eds.), *Assistive technology for visually impaired and blind people* (pp 135-166). London, United Kingdom: Springer-Verlag. doi: 10.1007/978-1-84628-867-8.
- Kalagher, H., & Jones, S.S. (2011). Young children's haptic exploratory procedures. *Journal of Experimental Child Psychology*, 110, 592–602. doi:10.1016/j.jecp.2011.06.007
- Katz, D. (1989). The world of touch (Original work published 1925; Translated by L. E. Kreuger), Hillsdale, NJ: Erlbaum.
- Kelly, S. M. (2009). Use of assistive technology by students with visual impairments: Findings from a national survey. *Journal of Visual Impairment & Blindness*, 103(8), 470-480. Retrieved from [http://www.afb.org/jvib/jvib\\_main.asp](http://www.afb.org/jvib/jvib_main.asp)
- Kelly, S. M., & Smith, D. W. (2011). The impact of assistive technology on the educational performance of students with visual impairments: A synthesis of the research. *Journal of Visual Impairment & Blindness*, 105(2), 73-83. Retrieved from [http://www.afb.org/jvib/jvib\\_main.asp](http://www.afb.org/jvib/jvib_main.asp)
- Klatzky R. L., & Lederman S. J. (2003). Touch. In: I. B. Weiner (Ed.-in-Chief), A. F. Healy & R. W. Proctor (Vol. Eds.), *Handbook of Psychology 4, Experimental psychology* (pp. 147–176). New York, N.Y: Wiley.
- Klatzky, R. L., & Lederman, S. J. (2007). Do intention and exploration modulate the pathways to haptic object identification? *Behavioral and Brain Sciences*, 30, 213-214. doi:10.1017/S0140525X07001525
- Klatzky, R. L., & Lederman, S. J. (1995). Identifying objects from a haptic glance. *Perception & Psychophysics*, 57, (8), 1111-1123. doi: 10.3758/BF03208368
- Klatzky, R. L., Lederman, S. J., & Reed, C. (1987). There's more to touch than meets the eye: The salience of object attributes for haptics with and without vision. *Journal of Experimental Psychology: General*, 116(4), 356-369. doi: 10.1037/0096-3445.116.4.356
- Knight, M. (2013). Early learning access technology framework for children who are blind or have significant vision impairment. Royal Institute for Deaf and Blind Children. Retrieved from <http://www.spevi.net/spevi/resources.php>
- Landau, B. (1991). Spatial representation of objects in the young blind child. *Cognition*, 38(2), 145–178. doi: 10.1016/0010-0277(91)90050-E
- Lederman, S. J., & Klatzky, R. L. (1987). Hand movements: A window into haptic object recognition. *Cognitive Psychology*, 19, 342-368. doi: 10.1016/0010-0285(87)90008-9
- Liu, T. (2009). Orientation and mobility in cyberspace. *AER Journal: Research and Practice in Visual Impairment and Blindness*, 2(1). Retrieved from [http://www.aerbvi.org/downloads/15/0/aerj\\_2009\\_winter.pdf](http://www.aerbvi.org/downloads/15/0/aerj_2009_winter.pdf)
- Liu, X., Crump, M. J. C., & Logan, G. D. (2010). Do you know where your fingers have been? Explicit knowledge of the spatial layout of the keyboard in skilled typists. *Memory & Cognition*, 38(4), 474-484. doi: 10.3758/MC.38.4.474
- Lockhart, A., & Zeitz, L. (2012). Keyboarding camp! Identifying the effects of 4th-grader characteristics on keyboarding proficiency. *Journal for Computing Teachers*. Retrieved from <http://www.leighzeitz.com/keyboardingresearch/TypingCampLockhartZeitz2010.pdf>
- Logan, G. D., & Crump, M. J. C. (2009). The left hand doesn't know what the right hand is doing: The disruptive effects of attention to the hands in skilled typewriting. *Psychological Science*, 20, 1296-1300. doi: 10.1111/j.1467-9280.2009.02442.x
- Logan, G. D., & Crump, M. J. C. (2011). Hierarchical control of cognitive processes: The case for skilled typewriting. In B. H. Ross (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 54, pp. 1–27). Burlington: Academic Press. Retrieved from <http://www.psy.vanderbilt.edu/faculty/logan/logan%20crump%20psych%20learn%20mot%202011.pdf>
- Marek, B. (1997). Before a blind child can read a map. First steps in tactile graphics. Paper presented at ICEVI 10th world conference in Sao Paulo, Brazil. Retrieved from <http://icevi.org/publications/icevix/wshops/0352.html>
- Marek, B. (2000a). Does a stone look the way it feels? Introducing tactile graphics, spatial relations and visual concepts to congenitally blind children. Paper presented at the European ICEVI Conference, Cracow, Poland. Retrieved from <http://www.hungryfingers.com/stone.html>
- Marek, B. (2000b). Learning from experience. Mobility and daily living skills in an English language classroom. Paper presented at the European ICEVI Conference, Cracow, Poland. Retrieved

- from [www.icevi-europe.org/cracow2000/proceedings/chapter05/05-08.doc](http://www.icevi-europe.org/cracow2000/proceedings/chapter05/05-08.doc)
- McKinnon, D. H., & Nolan, P. C. J. (1990). Keyboarding, touch typing and computers: What students think. In: J. G. Hedberg, J. Steele & M. Mooney (Eds.), *Converging Technologies. Selected papers from EdTech'90*, 59-68. Canberra, Australia: AJET Publications. Retrieved from <http://www.ascilite.org.au/aset-archives/confs/edtech90/mckinnon.html>
- Millar, S. (1975). Spatial memory by blind and sighted children. *British Journal of Psychology*, 66(4), 449. Retrieved from <http://cf5pm8sz2l.search.serialssolutions.com>
- Millar, S. (2008). *Space and sense (Essays in Cognitive Psychology)*. East Sussex, UK: Psychology press. Retrieved from <http://www.ebilib.com.au>
- Modified keys on a keyboard (n.d.). Retrieved from <http://www.freepatentsonline.com/6667697.html>.
- Pagliano, P. (2012). *The multisensory handbook. A guide for children and adults with sensory learning disabilities*. New York, N.Y: Routledge.
- Presley, I., & D'Andrea, F. M. (2008). *Assistive technology for students who are blind or visually impaired: A guide to assessment*. New York, N.Y: AFB Press
- Raz, N., Striem, E., Pundak, G., Orlov, T., & Zohary, E. (2007). Superior serial memory in the blind: A case of cognitive compensatory adjustment. *Current Biology*, 17, 1129–1133. doi: 10.1016/j.cub.2007.05.060
- Sanders, A. F. J. (2008). Investigations into haptic space and haptic perception of shape for active touch. Doctoral dissertation, University of Utrecht, The Netherlands. Retrieved from <http://wexler.free.fr/library>
- Snyder, K. M., Ashitika, Y., Shimada, H., Ulrich, J. E., & Logan, G. D. (2014). What skilled typists don't know about the QWERTY keyboard. *Attention, Perception, & Psychophysics*, 76, 162-171. doi: 10.3758/s13414-013-0548-4
- Soechting, J. F., Gordon, A. M., & Engel, K. C. (1996). Sequential hand and finger movements: typing and piano playing. In J. R. Bloedel, T. J. Ebner, & S. P. Wise (Eds.), *The acquisition of motor behavior in vertebrates* (pp. 343-360). Harvard : MIT Press. Retrieved from <http://books.google.com.au>
- Special Education Technology British Columbia (1999). Visually impaired resource guide. Assistive technology for students who use Braille: Keyboarding skills. Retrieved from [http://www.setbc.org/setbc/vision/virg/p2\\_10.html](http://www.setbc.org/setbc/vision/virg/p2_10.html)
- Stauffer, M. (2008). Instruction of keyboarding skills: a whole language approach to teaching functional literacy skills to students who are blind and have additional disabilities. *International Journal of Special Education*, 23(1), 74-81. Retrieved from <http://files.eric.ed.gov/fulltext/EJ814376.pdf>
- Statewide Vision Resource Centre. (2013). Expanded core curriculum for students with vision impairments. Retrieved from <http://www.svrc.vic.edu.au/CUecc.shtml>
- Stone, D., Jarrett, C., Woodroffe, M., & Minocha, S. (2005). User interface design and evaluation (Interactive technologies). Morgan Kaufman. Retrieved from <http://books.google.com.au>
- Tapp, K. M., & Logan, G. D (2011). Attention to the hands disrupts skilled typewriting: The role of vision in producing the disruption. *Attention, Perception & Psychophysics*, 73(8), 2379-2383. doi: 10.3758/s13414-011-0208-5
- Theurel, A., Witt, A., Claudet, P., Hatwell, Y., & Gentaz, E. (2013). Tactile picture recognition by early blind children: The effect of illustration technique. *Journal of Experimental Psychology: Applied*, 19(3), 233-240. doi: 10.1037/a0034255
- Tolman, E. C. (1948). Cognitive maps in rats and men. *Psychological Review*, 55, 189-208. Retrieved from <http://psychclassics.yorku.ca/Tolman/Maps/maps.htm>
- Ungar, S., Blades, M., & Spencer, C. (1996). The construction of cognitive maps by children with visual impairments. In: J. Portugali (Ed.), *The construction of cognitive maps* (pp. 247-273). Dordrecht, The Netherlands: Kluwer Academic Publishing. Retrieved from <http://richarddagan.com/cogmap/portugali.pdf>
- Withagen, A. (2014). Tactual functioning of blind children. Doctoral dissertation, Radboud University Nijmegen, The Netherlands.
- Withagen, A., Vervloed, M. P. J., Janssen, N. M., Knoors, H., & Verhoeven, L. (2009). The tactual profile: Development of a procedure to assess the tactual functioning of children who are blind. *British Journal of Visual Impairment*, 27(3), 221-238. doi: 10.1177/0264619609106362

# Reflecting on my experiences of teaching Tadoma

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## ABSTRACT

Quite a few years ago when I was working as a special education teacher I taught Tadoma, a form of tactile speech reading. The system is largely neglected today but I have always felt that somewhere along the line I should share my experiences, particularly considering there are now so few people around the world with expert knowledge in this area. In this paper I provide a description of Tadoma: what it is, who developed it, and when, where, and why it was taught. I go on to provide details regarding how I taught it, its strengths and weaknesses, and conclude with a discussion regarding whether there might be a place for Tadoma in 2014.

## INTRODUCTION

I work as an academic at an Australian university in teacher education. My particular research interest is working to ensure children with disabilities, particularly those with multiple disabilities, receive the best education possible. I have had this interest for a long time.

After high school I enrolled in a three year Diploma of Teaching (Primary). In my second year I majored in special education and in my third year I specialized in vision impairment. My first appointment was as a secondary support inclusion teacher at local high schools for 12 Braille using students with vision impairment. While doing this teaching I continued night study in Special Education at University, first completing a Bachelor of Educational Studies and then a Master of Educational Studies. I also continued my interest in Speech and Drama studying through the Australian Music Examination Board (AMEB).

The following year I started work as a teacher at a school for children with vision impairment. There were several children who were deafblind enrolled at the school and over time I got to work with each of them. It was during this time that I started teaching a young adult who was deafblind. For the purposes of this paper I shall call her Nicole. Actually the Nicole in this paper is more a compilation of my combined experiences of working with people who are deafblind, than a particular individual. This fictional case allows me to illustrate points I want to make while further helping to protect any particular student's privacy.

Anyway, the Nicole in this paper was highly intelligent, capable and had an outgoing personality. She had gradually become adventitiously deaf and blind during mid to late childhood (7-12 years). She was post-lingually deaf, which means she acquired speech and language before she lost her hearing. Even though she could speak clearly, there were three main concerns regarding her communication. They were:  
How could others easily and effectively communicate with her? (Receptive communication)  
How could she maintain the speech and communication skills she had before she started to lose her hearing? (Expressive communication - maintenance)  
How could she learn new speech and new communication skills, especially the incidental ones that arise in spontaneous ways, to match her personality, interests and aspirations?  
(Expressive communication – new skills)

Tactile finger spelling quickly became the preferred method for Nicole's receptive communication. She turned out to be very adept at it, able to quickly anticipate much of what was being communicated. A strategy that worked well for her was to have a printed copy of the Tactile Finger Spelling Alphabet and to give it to people who wanted to communicate with her if they were not fluent in the technique (Gallagher, 2014).

Nicole's expressive communication issues were more challenging. After extensive problem solving Nicole herself suggested I try to teach her Tadoma. She had been reading a Braille newsletter that mentioned it and she was eager to give it a go. I therefore searched the school and university libraries to try to learn more about it, which turned out to be very little, although a review is now available (Reed, 1995). Nicole and I were, therefore, largely self-taught.

### **WHAT IS TADOMA?**

Tadoma (sometimes called tactile lip reading) is a form of tactile speech reading initially developed by the deafblind person for communication. The Tadoma user employs their fingers, thumb, palm and even wrist to detect sound vibrations produced in the face and neck plus air flow patterns from the mouth and translate these into speech recognition capability.

The classic Tadoma setup is for the deafblind person to gently place their preferred hand on the speaker's face, with the thumb over both lips, the first and second fingers spread out across the cheek, the third finger following the line of the jaw, and the little finger and when possible the wrist, curling down the chin to gently touch the throat. Users sometime employ the other hand to sense throat vibrations, especially if the user is a young child and has very small hands, or wishes to explore unfamiliar sounds.

In practice Nicole and I learnt that it is important to make sure that both the deafblind person and the speaker are comfortably positioned. We found that it is counterproductive for the speaker to hold the deafblind person's arm or hand in place, as this will compromise their ability to sense the vibrations. Most important of all, we learnt that Tadoma should be an enjoyable social experience. If it is not fun for either person then it is not productive to continue.

### **WHO DEVELOPED IT?**

Colman (2008) reports that tactile speech reading was originally devised in Norway in the 1890s. However, most references attribute the invention of the Tadoma method to a teacher in the USA called Sophie Alcorn (Tabak, 2006). Her method evolved over a period of three decades from about 1910 when she started working with Oma Simpson, an eight-year-old deafblind girl. After working 10 years with Oma, Alcorn then worked for four years with Winthrop (Tad) Chapman, who was also deafblind. In the late 1920s she named the synthesis of her approach the Tadoma Tactile-Sense Method after her first two students, Tad and Oma.

### **WHEN, WHERE AND WHY IT WAS TAUGHT?**

Once Alcorn had trained a teacher colleague, Inis B. Hall, in her method, Inis took over Tad's education. Later when Tad moved to the Perkins School for the Blind in 1931, Hall accompanied him as his teacher and introduced the method to staff at the Perkins school. Tadoma subsequently became a mainstay of the Perkins school and ultimately the preferred oral method of teaching deafblind children worldwide.

During the 1960s, however, due to a changing demographic in the deafblind population, Tadoma fell out of fashion, so by the mid-1970s when I started teaching it, its use was already quite rare. Tadoma lost impetus because it did not suit children who were congenitally deafblind. In 1964-65 there was a worldwide rubella epidemic (German measles), with



pregnant women who contracted the disease passing on the virus to the developing fetus. Over a two-year period almost 20,000 children were born deafblind in the USA alone, with significant numbers in Australia as well.

The new focus of deafblindness education was, therefore, to cater for children who were congenitally deafblind. Tadoma slipped off the agenda, and new methods emerged, such as those informed by Behaviorism (Skinner, 1964) and perceptual-motor training (Kephart, 1960). Still, it is important to remember that Tadoma did work with some children, providing they were of high intelligence and they had well-developed speech and language skills before they became deafblind (Chomsky, 1986).

## HOW I TAUGHT TADOMA

As neither Nicole nor I knew much about Tadoma we started by just exploring what we did know, and experimenting with hand positions to work out what was comfortable and what she could easily detect. We treated it like a game and had lots of fun. We systematically went through all the nursery rhymes and poems she knew from her early childhood.

This was an excellent way to start because it helped give Nicole a big picture, (a macro level understanding), of the process and it was “anticipatory” (Pagliano, 2012, p. 46). Prediction played a key role in her learning. Once she identified the nursery rhyme she would be able to easily follow the rest of the rhyme. She would get very excited when she recognized a poem or nursery rhyme and would burst into laughter. The rhyme and rhythm seemed to help enormously. Being able to share laughter was an added bonus and it became a great motivator. We even started to explore such other facial expressions as a yawn and a frown.

We then moved on to being more systematic in our exploration of sounds. We learnt about the mechanisms of speech: respiration, phonation, resonance, and articulation (Van Riper & Erickson, 1996). Respiration involves inhalation and exhalation and is for two main purposes: to oxygenate blood, and to power speech. When we breathe to oxygenate the blood, the lungs in our chest (thorax) expand and when we exhale, the air is passively released. When we breathe to speak, our inhalation is much faster and the exhalation slower, precisely controlled to power the speech process. In addition to powering speech production this control enables the speaker to control pitch, pace, pause, emphasis, volume and stress (prosodic features).

In my university studies I had been made aware of research into the ways young children acquire knowledge of prosodic features from a very early age. Because I was particularly interested in this area, we did lots of exercises revisiting the nursery rhymes and poems Nicole had identified earlier. She became adept at identifying the rhyme or poem and then at determining the types of modulation being used, whether the delivery was fast or slow, which parts were given emphasis, where the pauses were, which parts were loud, and which parts were soft. She would then try to replicate the modulation using her own speech.

It was always tremendous fun. I think the main reason it was so successful was that it never seemed to be too arduous a task. The lessons just flowed in a natural way. In one lesson Nicole explained to me that people also use modulation in their tactile finger spelling. Nicole said that she was able to pick up quite a lot of information from the way people signed to her. She even told me she could tell what mood I was in by the way I signed. I was excited by this observation because it meant she had achieved a sophisticated understanding of modulation. It also told me that we were ready to move on to something else.

For phonation to occur, the air passes up the windpipe (trachea) into the larynx, and through the thyroid cartilage, where paired vocal folds (vocal cords or epithelium) vibrate to produce the sound of the human voice. The voice is further modified through a process called

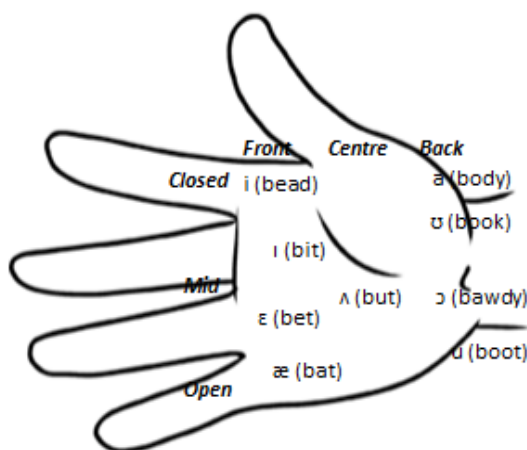
resonation. Resonation occurs in the throat and mouth cavities by changing tongue, lip, soft palate and lower jaw positions. Additional resonation occurs in the nasal and chest cavities.

Once again we did activities aimed at helping Nicole to become able to recognize these different types of resonances. The nasal cavity vibrations for 'n', 'm', and 'ng' were relatively easy to detect using her index finger, as were low, medium and high-pitched vibrations. For example, low pitch sounds were produced lower in the throat and high pitch sounds were produced higher in the throat. This made them easy to discern. Nicole was so thrilled by this discovery that she immediately wanted me to sing *doh*, *re*, *mi*, *fa*, *so*, *la*, *ti*, *doh* while she felt the progression. Then she wanted to try singing herself. This was when I realized that the Tadoma method had many applications beyond mere tactile speech reading. As a consequence we started to spontaneously explore animal and bird noises: cow, horse, pig, sheep, kookaburra, cat, dog, duck, frog and rooster (Crook, 2014). Nicole was delighted to be playing this game that she had originally learnt in early childhood and now could revisit using Tadoma. Once she correctly identified an animal sound she would immediately try to reproduce it and feel her own neck and face to check whether it was accurate. This led us on to investigating articulation.

Articulation, the process of making the sound distinct and therefore intelligible to the listener, engages the moveable organs of speech (lips, tongue, lower jaw, and soft palate). The unit of speech is called a phoneme. There are two types: vowels and consonants. A vowel is a voiced sound produced through an open vocal tract while a consonant is either voiced or unvoiced and is produced with a partial or complete closure of the vocal tract. Nicole and I started off this next task by exploring each phoneme separately.

When doing this I searched for a way to make the tactile kinesthetic information less ambiguous. While at university I had studied Cued Speech (Heracleous, Beauteemps, & Aboutabit, 2010), a visual system used with people with a hearing impairment to make speech more accessible. It uses cues (handshapes and locations near the mouth) to represent consonants and vowels to augment speechreading. The aim is to make every speech sound visually distinct thereby helping to remove the guesswork. The other characteristic that impressed me about Cued Speech was the way the cues complemented the pertinent architecture of the sound. I wondered whether I could invent a similar system to make it easier for Nicole.

I therefore designed a tactile mapping system on the palm of Nicole's free hand to tactually describe where in the mouth the sound was being made and how it was produced, particularly the shape of the lips (Reed, 1992). Nicole would use her left hand for Tadoma, so I would plot the sound on her right palm. The square of her palm became a grid. The line closest to the fingers represented the front of the mouth, the part near the thumb and wrist represented the back of the mouth, and the middle of the palm represented the middle of the mouth. The top of the palm (index finger) then represented the lips in closed position while the bottom of the palm (little finger) represented the lips in open position, with the middle finger representing the lips being half open or half closed. For example the vowel 'i' as in *bead* is produced at the front of the mouth with the lips almost closed, so I would plot it on the mount of the index finger. The sound 'æ' as in *bat*, is also produced at the front of the mouth but this time with the lips open, so I would plot this sound on the mount of the little finger (see Figure 1).



**Figure 1. Palm map of vowel position of mouth and lips**

In English there are 21 consonant letters (B-Z without the vowels) and a number of digraphs (double consonant combinations like 'ch', 'sh', 'th', 'zh'). Consonants are sounds that are: voiced ('v') or unvoiced ('f'), produced by the lips ('p'), with the front of the tongue ('t'), with the back of the tongue ('k'), in the throat ('h'), or in the nasal cavity ('n', 'm', 'ng').

Nicole could easily identify whether a sound was voiced or unvoiced by feeling the vibrations in the throat. We learnt that some consonants come in pairs. Both are produced in the same way in the mouth only one is voiced and the other is unvoiced. We found eight sets:

- b as in book (voiced), p as in please (unvoiced)
- v as in vanilla (v), f as in five (u)
- th as in they (v), th as in thirty (u)
- d as in dish (v), t as in ten (u)
- z as in zero (v), s as in sir (u)
- g as in genre (v), sh as in she (u)
- j as in jump (v), ch as in cheers (u)
- g as in good (v), k as in king (u)

Once we learnt about the sounds we constructed a game in which Nicole had to tell whether a sound was voiced or unvoiced by only touching the throat. It began with her writing tongue twisters for the two sets of sounds and making comparisons. For example, Nicole could feel a regular vibration flow for 'Ben built a big box' whereas she could feel an irregular vibration flow for 'Paul plays a piece on the piano'.

Consonants are arranged according to the type of closure of the vocal tract. For example oral stops (plosives) occur when there is a complete closure of the mouth, leading to increased air pressure, which is then allowed to pass through the lips. The lessons continued along this vein, exploring each sound and sound set and making up games to help ensure Nicole was able to identify the sound in conversation. For me the most important part of each lesson was to ensure that the message was transmitted effectively and then to follow up by thinking about the detail.

### **THE STRENGTHS AND WEAKNESSES OF TADOMA**

Both Nicole and I learnt a tremendous amount from Tadoma. In retrospect I now think that the method provided Nicole with a contextual bridge to communication and a reminder that communication is a two-way street. I am now going to consider these from two perspectives: strengths and weaknesses.

### ***The strengths***

At the start of the paper I talked about there being three concerns about Nicole's communication. One was to do with her receptive communication and two were in regard to her expressive communication. Tadoma certainly helped in all three areas and in surprising, unexpected but also natural ways (Rødbrøe & Souriau, 2000). The communication was a particularly co-creative process (Nafstad & Rødbrøe, 1999). It taught us how to make the tactile finger spelling more interesting by using modulation. It also helped to provide Nicole with many new and different ways to gain feedback about her own speech. Learning about modulation and identifying ways to be able to tactually determine if and when it is occurring helped Nicole make her own speech more interesting and this gave her confidence. I can remember us having a lot of fun re-telling the story of Goldilocks and the Three Bears, with the narrator's voice, and those of Goldilocks and the three bears: father bear, mummy bear and little baby bear. Nicole then told the story to her young nephew, who was so enthralled he wanted it to become a regular event so Nicole had to learn more stories. The Three Little Pigs was a resounding success.

The real strength of Tadoma was in the third area. It was a valuable teaching tool that could be used to teach Nicole how to pronounce new words. I can still remember the lesson we had on how to pronounce existentialism. I was surprised at how easy learning this word had become, now that we had a collection of tools at our disposal. Tadoma also greatly enriched the communication, allowing us to be spontaneous and adventurous in our communication, traversing into singing and even into producing animal and bird sounds.

### ***The weaknesses***

By the 1980s Nicole was making good progress with her Tadoma. There was a problem though. Most people just did not like having someone put their hand on their face. This was a particularly important consideration in the 1980s because of the spread of HIV and AIDS. People were becoming increasingly concerned about their own personal hygiene and infection control. This meant that Tadoma was no longer a socially acceptable practice. So Nicole stopped using it and I stopped teaching it. Other issues relate to the rise of inclusion and the subsequent demise of special schools catering to intelligent children, for example, the fact that Tadoma is very labour intensive, and it requires highly specialized skills and training.

### **IS THERE A PLACE FOR TADOMA IN 2015?**

Thirty-five years later the world has changed again and perhaps everything old is new again. Nowadays there might well be occasions when Tadoma could be beneficial, supporting the development of communication strategies with people of all ages who are deafblind (Hart, 2013). For the person who is deafblind Tadoma offers an opportunity to communicate in a much more intimate, rich and rewarding way than most other systems. This is an extremely important consideration because being both deaf and blind can be severely socially isolating, especially for those people who have a memory of communication using both vision and hearing.

Tadoma is potentially useful for people who are post-lingually deaf, who have good speech and language skills, and who are particularly socially astute. It may be suitable for use with close family members such as parents and children, friends and caring professionals. For this to happen though the deafblind person must have a sophisticated understanding of the niceties of social etiquette. For example, I was watching one person communicate when he had the flu. This involved taking his hand away to cover his mouth as he coughed and then returning his hand to the person with whom he was communicating – clearly unacceptable. Nowadays, options in such situations include a surgical facemask, instant hand sanitizer, and/or disposable gloves.

In my opinion Tadoma is not suitable for functional communication, where the person who is deafblind requires certain essential tasks to be done for them. Tadoma is better suited for higher levels of communication, those that involve pleasant social and personal interactions with lots of laughter and a genuine sharing of the finer things in life. It, therefore, could fit nicely into the emerging area of haptic communication, where emphasis is placed on ensuring that the person who is deafblind is able to use touch “to create a bridge to their outside world” (Pedersen, 2014, p. 26).

## REFERENCES

- California Deaf-Blind Services. (2014). Fact sheet #005 Tadoma. Retrieved from <http://www.sfsu.edu/~cadbs/Eng005t.html>
- Chomsky, C. (1986). Analytic study of the Tadoma method: Language abilities of three deaf-blind subjects. *Journal of Speech and Hearing Research*, 29, 332.
- Colman, A. (2008). *A dictionary of psychology* (3rd ed.). Oxford, United Kingdom: Oxford University Press.
- Crook, C. (2014). Carol Crook discusses the Tadoma method. Retrieved from <http://www.perkins.org/resources/ask-the-expert/carol-crook-discusses-tadoma.html>
- Gallagher, J. (2014). The deafblind manual alphabet. In A-Z to Deafblindness. Retrieved from <http://www.deafblind.com/card.html>
- Hart, P. (2013). The role of a partner in communication episodes with a deafblind person. *DbI Review*. Retrieved from [http://www.deafblindinternational.org/review1\\_c.html](http://www.deafblindinternational.org/review1_c.html)
- Heracleous, P., Beautemps, D., & Aboutabit, N. (2010). Cued speech automatic recognition in normal-hearing and deaf subjects. *Speech Communication*, 52, 504–512.
- Keller, H., with Sullivan, A., & Macy, J. (1903). *The story of my life*. New York, NY: Doubleday, Page & Co.
- Kephart, N.C. (1960). *The slow learner in the classroom*. Columbus, OH: C.E. Merrill Books.
- Lash, J. (1980). *Helen and teacher: The story of Helen Keller and Anne Sullivan Macy*. New York, NY: Delacorte Press.
- Nafstad, A. (2000). Co-creating communication. *NUD Newsletter*, Winter, Dronninglund, Nordic Staff Development Centre.
- Pagliano, P. (2012). *The multisensory handbook: A guide for children and adults with sensory learning disabilities*. London: A David Fulton Book (Routledge).
- Pedersen, B. (2014). A bridge to the outside world. *DbI Review*, 52, 25-26.
- Reed, C. (1992). Analytic study of the Tadoma method: Improving performance through the use of supplementary tactual displays. *Journal of speech and hearing research*, 35(2), 450.
- Reed, C. (1995). Tadoma: An overview of research. In G. Plant, & K. Spens (Eds.). *Profound deafness and speech communication* (pp. 40-55). San Diego, CA: Singular Publishing Group.
- Rødbroe, I. & Souriau, J. (2000). Communication. In J. McInnes (Ed). *A Guide to planning and support for individuals who are deafblind*. Toronto, ON: University of Toronto Press.
- Skinner, B. F. (1964). New methods and new aims in teaching. *New Scientist*, 122, 483-84.
- Tabak, J. (2006). *Significant gestures: A history of American Sign Language*. Westport, CT: Praeger Publishers.
- Van Riper, C. & Erickson, R. (1996). *Speech correction: An introduction to speech pathology and audiology* (9th ed.). Needham Heights, MA: Allyn & Bacon.

# The development of emergent literacy skills in children with a vision impairment is both complex and multifaceted

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## ABSTRACT:

This paper examines the ways that professionals working with children with a vision impairment should implement emergent literacy programs. Three recommendations are made: 1. the importance of including oral language, phonological awareness, print awareness and alphabetic knowledge in early intervention literacy programs; 2. the importance of utilising a family-centred approach; 3. the need to adopt a play-based approach focusing on all five senses to teach emergent literacy skills.

## INTRODUCTION

The process of becoming literate begins at birth; long before any formal instruction in reading and writing (Wormsley, 1997, p. 17). Emergent literacy is the term used to define this process. Brennan, Luze, and Peterson (2009, p. 694) define emergent literacy as “the developmental process and activities that children engage in prior to the formal acquisition of the skills needed to read and write.” Children with a vision impairment are at risk of experiencing delays in language and literacy development (Day, McDonnell, & Heathfield, 2005; Erickson & Hatton, 2007b; Wormsley, 1997). The literature suggests that fewer opportunities for incidental learning, limited experiences and opportunities, and less access to role models for reading and writing are just some of the reasons why young children with a vision impairment are at risk (Erickson & Hatton, 2007b; Lamb, 1998; Wormsley, 1997). Given these factors, it is critical that emergent literacy skills are nurtured in home and early education environments.

In this article, it is proposed that the ways we teach emergent literacy to children with a vision impairment plays a critical role in the development of this skill area. In developing this theme, focus is placed on outlining the relationship that exists between the whole language approach and emergent literacy; describing the theoretical models of emergent literacy; and discussing how the emergent literacy skills and other domains should be taught to these children. A conclusion will be drawn based upon the preceding analysis.

The relationship between the whole language approach and emergent literacy  
Prior to the whole language movement, the emphasis for children with a vision impairment was on the perceptual-motor and code-breaking aspects of reading (Lamb, 1995; 1998). The advent in Australia of the whole-language approach in 1983 had profound implications for the teaching of emergent literacy to children with a vision impairment (Lamb, 1998). The whole language approach is based on the premise that language is kept whole and in context, so that meaning is maintained (Anstey & Bull, 1996; Lamb, 1996; Rex, Koenig, Wormsley, & Baker, 1995; Swenson, 1999). Emergent literacy activities, within the whole language approach, need to be experience-based, language-centred and associated with meaningful texts. Skills essential to children with a vision impairment, for example tactile perception and fine motor skills, need to be taught within a language context and not as discrete skills (Lamb, 1998).

## **EMERGENT LITERACY THEORETICAL ORIENTATIONS**

While acknowledging that in order to maximise language learning for children with a vision impairment, emergent literacy needs to be kept whole and integrated. It is, therefore, crucial to examine the emergent literacy theoretical propositions. Two predominant theoretical models have evolved. The first is based on the work of Senechal, LeFevre, Smith-Chant, and Colton (2001), the other on the work of Whitehurst and Lonigan (1998). Proponents of the former model advocate that emergent literacy is comprised of three separate, but related, constructs: oral language, metalinguistic skills and literacy knowledge. In contrast, Whitehurst and Lonigan (1998) contend that emergent literacy consists of two interdependent sets of skills: inside-out skills (e.g., phonological awareness, letter knowledge) and outside-in skills (e.g., language, conceptual knowledge). Proponents of Whitehurst and Lonigan (1998) emphasise the relationships of the home literacy environment and the impact that this has on the emergent learner. Although the proponents of each model offer slightly different theoretical underpinnings for emergent literacy, both agree on the importance of oral language, phonological awareness, print awareness and alphabetic knowledge (Sapp & Hatton, 2004).

A review of the available research literature revealed that subsequent studies have confirmed the importance of at least four critical content categories in early literacy: oral language, phonological awareness, print awareness and alphabetic knowledge (Cabell, Justice, Kaderavek, Turnbull, & Breit-Smith, 2009; Erickson & Hatton, 2007a; National Institute for Literacy, 2007; Sapp & Hatton, 2004). This literature search also revealed that the critical components of emergent literacy for young children with a vision impairment and their sighted peers, are similar (Erickson & Hatton, 2007a; Erickson & Hatton, 2007b). The above four areas will now be discussed individually in relation to their development for young children with a vision impairment.

### **ORAL LANGUAGE**

Oral language refers to a child's ability to effectively use and comprehend language (Cabell et al., 2009). Parents and teachers can facilitate children's oral language development through giving rich descriptions and feedback (Erickson & Hatton, 2007a). Conversation should include rare and new words and focus should be placed on children using grammatically correct language patterns (Roskos, Christie, & Richgels, 2003). In order to support oral language development in children with a vision impairment, activities such as book sharing (especially through tactile books), listening and responding to music, poems and stories, language-rich and responsive interactions, and complex dramatic play need to be included in their daily program (O'Connor & Vadasy, 2011; Roskos et al., 2003).

### **PHONOLOGICAL AWARENESS**

Phonological awareness is an umbrella term that refers to children's ability to distinguish and segment the sounds in oral language (Hatton, Erickson, & Lee, 2010; Sapp & Hatton, 2004). Falling under this umbrella term is phonemic awareness; the most complex level of phonological awareness. Phonemic awareness is the ability to attend to and perform tasks on the individual phonemes in words (Cabell et al., 2009; O'Connor & Vadasy, 2011). For example, understanding that C-A-T can blend to form the word "cat". A review of the related research revealed that phonological deficits are one of the leading causes of reading difficulties, in children who are sighted and children with a vision impairment (Hatton et al., 2010; Monson & Bowen, 2008). Such auditory activities as playing games and listening to stories and songs that involve rhyme, alliteration, blending sounds, sound matching, and hearing syllables are crucially important for children with a vision impairment (Roskos et al., 2003).

## **PRINT AWARENESS**

Print awareness refers to children's understanding of the ways print works in a book. More specifically, relates to a child's understanding that texts (in either print or braille) are read from left to right and from top to bottom. Books are read from front to back and pages are turned during reading (Cabell et al., 2009; Sapp & Hatton, 2004; Wormsley, 2004). Children with a vision impairment will benefit from books in varied formats including print, braille, and audio books, placed in play environments that are accessible to children (Day et al., 2005). Reading aloud should be a daily activity in the life of a young child with a vision impairment. Not only does this activity allow a child to hear the way print is read, it also develops 'book concepts' and builds awareness of vocal inflection and characterisation (Brennan et al., 2009). In addition, such materials as a slate, stylus, braillewriter and speech-output devices are essential to the development of early writing skills (Day et al., 2005).

## **ALPHABETIC KNOWLEDGE**

Alphabetic knowledge is loosely defined as the familiarity with letter shapes, names and sounds (O'Connor & Vadasy, 2011). This includes knowledge of upper- and lowercase letters. For the child with a vision impairment, it is critical that displays of the alphabet are placed in accessible locations and that appropriate media are used (e.g., print, large print, braille). Effective ways of developing alphabetic knowledge for young children with a vision impairment include materials that promote the identification of letters and their sounds by attaching copies of both the print and braille alphabets to the writing table, plastic letters, alphabet blocks with modified braille labels, charts and puzzles (Day et al., 2005).

## **SUMMARY OF THE RESEARCH FINDINGS - WHAT CONTENT AREAS ARE BEING FOCUSED UPON IN PRACTICE?**

Erickson and Hatton (2007b) conducted a study involving three classroom teachers of children with vision impairment. Twenty-three children with vision impairment, including two with multiple disabilities, participated in their study. Their ages ranged from four to six years. The study aimed at applying the conceptual model of Senechal et al. (2001) to children with a vision impairment. Results indicated that the teachers in this study were consistently incorporating oral language and literacy knowledge into their classrooms, but overlooking metalinguistic knowledge. In this instance, metalinguistic knowledge referred to both phonological awareness and syntactic knowledge. This study's finding is consistent with the results of a study conducted by Murphy, Hatton, and Erickson (2008). Their study aimed at determining what methods professionals report using to promote early literacy for 192 young children with a vision impairment. The respondents were asked to complete an online survey consisting of 29 questions. Results indicated that opportunities for early writing and alphabet experiences were lacking.

When examining studies involving emergent literacy methods employed in home environments, the results from a study conducted by Brennan et al. (2009) mirrored those of Erickson and Hatton (2007b) and Murphy et al. (2008). Brennan et al. (2009) explored the emergent literacy experiences that parents provide for their children with vision impairment. In their study, the children's ages ranged from one to eight years and parents were asked to complete a survey consisting of both multiple-choice and fill-in-the-blank questions. The study's findings revealed that parents and children were engaging in such literacy activities as singing songs, writing and scribbling. Once again, activities focusing on developing phonological awareness were not being implemented. Murphy et al. (2008, p. 144) believed that the lack of implementation of phonological awareness skills for children with vision impairment is "because they lack access to current resources on early literacy for all children and support to assist them in implementing these practices."



The importance of a family-centred approach in addressing emergent literacy  
 It has more recently been established that tailoring the content areas, activities and physical environment of the classroom or home environment is crucial to promoting the growth of emergent literacy (Day et al., 2005). Analysing the ways that emergent literacy is nurtured in the home and early education environments is also critical (Day et al., 2005). Early intervention has seen a shift away from professionally-directed to family-centred practice (Moore, 2008). Within the professionally-directed paradigm, professionals control the process of diagnosis and treatment (Moore, 2008). On the other hand, the family-centred approach is characterised by collaboration among professionals and family members (Moore, 2008). The family-centred approach takes place in natural environments and family members make the final decision about priorities and intervention strategies (Erickson, Hatton, Roy, Fox & Renne, 2007; Moore, 2008). Not only does some of the literature strongly recommend the adoption of the family-centred approach for young children with a vision impairment, but the US Individuals with Disabilities Education Improvement Act of 2004 provides legislative support for using this approach (Erickson et al., 2007). Team members might include early interventionists, parents, kindergarten teachers and the vision support teacher. Within this team, some professionals and parents might lack the confidence in their abilities to develop the child's literacy skills. The vision support teacher needs to empower team members with the knowledge and skills to confidently work with these children (Erickson & Hatton, 2007a). For example, parents may need to understand that they should talk to children with a vision impairment, as they would a sighted baby, and immerse these children in language-rich environments in which objects are described and experiences are discussed (Erickson & Hatton, 2007a; Wormsley, 1997). Similarly, kindergarten teachers may need to be provided with professional development in ways to adapt literacy materials and activities for children with a vision impairment (Day et al., 2005).

#### **A REVIEW OF THE RESEARCH FINDINGS - IS A PROFESSIONALLY-DIRECTED OR FAMILY-CENTRED APPROACH BEING IMPLEMENTED IN PRACTICE?**

A review of the research literature revealed that the family-centred approach is being currently widely implemented in practice. In the US, both Erickson et al. (2007) and Murphy et al. (2008) conducted a study that focused on the implementation of the family-centred approach in addressing emergent literacy in early intervention. Erickson et al. (2007) conducted a study involving two early interventionists and three children. The children ranged in age from one to six and had a vision impairment. The results from this study were consistent with a family-centred approach, and indicated that the early interventionists and caregivers had formed trusting relationships. This resulted in caregiver's needs and ideas being responded to by the early interventionist.

Similarly, results from Murphy et al. (2008) reported that 74% of families in the study believed that specialists in vision impairment listened to families talk about their successes and concerns about literacy and 70% believed they facilitated early attachment. In this study, 192 teachers of children with a vision impairment were asked to complete an online survey consisting of 29 questions.

The need to adopt a play based approach to teaching emergent literacy  
 While acknowledging that a family-centred approach is an essential component of teaching emergent literacy to young children with a vision impairment, the way the team interacts with the young child is important. For most young children with a vision impairment, play consumes much of their time and energy throughout the day (Christie & Roskos, cited in Roskos et al., 2003). As such, play forms a wonderful medium for developing such emergent literacy skills as reading and writing. A review of the research literature indicated that the general benefits of play for children's literacy development are well documented (Christie &

Roskos, cited in Roskos et al., 2003; Sapp & Hatton, 2004). The benefits of play are further endorsed by the Council of Australian Government Early Years Learning Framework (2009).

Not only do literacy-enriched play environments expose children to valuable print experiences, allow children to manipulate literacy objects (e.g., books, writing tools) and practice narrative skills, they are one of the most effective ways of making literacy activities meaningful and enjoyable for children with a vision impairment (Lawhon & Cobb, 2002). How do parents and teachers play with young children with a vision impairment? Due to their lack of or limited sight, these children experience decreased opportunities to explore the world around them (Erickson et al., 2007; Wormsley, 1997). They may miss incidental learning from television, environmental print, pictures, or events occurring silently in their environments (Koenig & Farrenkopf, 1997). Parents and teachers need to set up play environments that encourage children to actively seek, explore and use books and print (Koenig & Farrenkopf, 1997; Roskos et al., 2003). These experiences need to focus on developing children's sense of hearing, feeling, smelling and tasting, so that they can fully engage in emergent literacy learning (Wormsley, 1997). Experiences need to occur during play in such natural, everyday activities as going shopping and riding a bicycle (Day et al., 2005).

The critical point is that parents and teachers must provide extra information on the environment by talking about the situational events taking place (Mangold, 1982; Wormsley, 1997). A study conducted by Koenig and Farrenkopf (1997) identified a repertoire of early-life experiences to which young children with vision impairment need to be exposed in order to develop foundation literacy skills. Koenig and Farrenkopf (1997) examined 254 beginning level readers from three published, basal, literacy series. This study concluded that the most common global experiences included doing or making things (e.g., painting, constructing items). These findings highlight the importance of numerous interactions and early life experiences for children with a vision impairment (Koenig & Farrenkopf, 1997).

## CONCLUSION

In conclusion, it has been proposed that the development of emergent literacy for children with a vision impairment is dependent on the way parents and teachers interact with one another, the child and their environment. The content categories of oral language, phonological awareness, print awareness and alphabetic knowledge are critical for emergent literacy development in these children. These areas need to be developed through the senses of hearing, feeling, smelling and tasting, using a play based approach. Parents and teachers need to support the development of emergent literacy through observing, modelling and setting up supportive, print-rich environments. Children with a vision impairment will thus be encouraged to independently explore and use books and print. In order to maximise learning opportunities, team members must work together and adopt a family-centred approach to emergent literacy development. If we are to steer children with a vision impairment on the path to becoming successful readers and writers, this support is vital (Day et al., 2005; Roskos et al., 2003).

## REFERENCES

- Anstey, M., & Bull, G. (1996). *The literacy labyrinth*. Sydney: Prentice Hall.
- Australian Government Department of Education, Employment and Workplace Relations & Council of Australian Governments. (2009). *Belonging, being and becoming: The early years learning framework for Australia*. Retrieved from [http://www.deewr.gov.au/earlychildhood/policy\\_agenda/quality/pages/earlyyearslearningframework.aspx](http://www.deewr.gov.au/earlychildhood/policy_agenda/quality/pages/earlyyearslearningframework.aspx)
- Brennan, S.A., Luze, G.L., & Peterson, C. (2009). Parents' perceptions of professional support for the emergent literacy of young children with visual impairments. *Journal of Visual Impairment and Blindness*, 103(10), 694-704.
- Cabell, S.Q., Justice, L.M., Kaderavek, J.N., Turnbull, K.P., & Breit-Smith, A. (2009). *Emergent literacy:*

- Lessons for success*. USA: Plural Publishing.
- Day, J.N., McDonnell, A.P., & Heathfield, L.T. (2005). Enhancing emergent literacy skills in inclusive preschools for young children with visual impairments. *Young Exceptional Children*, 9, 20-28.
- Erickson, K.A., & Hatton, D. (2007a). Literacy and visual Impairment. *Seminars in Speech and Language*, 28(1), 58-68.
- Erickson, K.A., & Hatton, D. (2007b). Expanding understanding of emergent literacy: Empirical support for a new framework. *Journal of Visual Impairment and Blindness*, 101(5), 261-277.
- Erickson, K., Hatton, D., Roy, V., Fox, D., & Renne, D. (2007). Literacy in early intervention for children with visual impairments: Insights from individual cases. *Journal of Visual Impairment and Blindness*, 101(2), 80-95.
- Hatton, D.D., Erickson, K.A., & Lee, D.B. (2010). Phonological awareness of young children with visual impairments. *Journal of Visual Impairment and Blindness*, 104(12), 743-752.
- Koenig, A.J., & Farrenkopf, C. (1997). Essential experiences to undergird the early development of literacy. *Journal of Visual Impairment and Blindness*, 91(1), 14-24.
- Lamb, G. (1995). *Fingerprints: A whole language approach to braille literacy*. Manuwera, NZ: Homai Vision Education Centre.
- Lamb, G. (1996). Beginning braille: A whole language-based strategy. *Journal of Visual Impairment and Blindness*, 90(3), 184-189.
- Lamb, G. (1998). Dots for tots. *British Journal of Visual Impairment*, 16(3), 111-115.
- Lawhon, T., & Cobb, J.B. (2002). Routines that build emergent literacy skills in infants, toddlers, and preschoolers. *Early Childhood Education Journal*, 30(2), 113-118.
- Mangold, S. (1982). *A teacher guide to the special educational needs of blind and visually handicapped children*. New York: American Foundation for the Blind.
- Monson, M.R., & Bowen, S.K. (2008). The development of phonological awareness by braille users: A review of the research. *Journal of Visual Impairment and Blindness*, 102(4), 210-220.
- Moore, T.G. (2008). Early childhood intervention: Core knowledge and skills. Retrieved from [http://ww2.rch.org.au/emplibrary/ccch/ECI\\_skills\\_and\\_knowledge.pdf](http://ww2.rch.org.au/emplibrary/ccch/ECI_skills_and_knowledge.pdf)
- Murphy, J.L., Hatton, D., & Erickson, K.A. (2008). Exploring the early literacy practices of teachers of infants, toddlers, and preschoolers with visual impairments. *Journal of Visual Impairment and Blindness*, 102(3), 133-146.
- National Institute for Literacy. (2007). National early literacy panel: Synthesizing the scientific research on development of early literacy in young children. Retrieved from <http://www.nifl.gov/nifl/NELP2007.html>
- O'Connor, R.E., & Vadasy, P.F. (2011). *Handbook of reading interventions*. New York: Guilford Publications.
- Rex, E.J., Koenig, A.J., Wormsley, D.P., & Baker, R.L. (1994). *Foundations of braille literacy*. New York: AFB Press.
- Roskos, K.A., Christie, J.F., & Richgels, D.J. (2003). The essentials of early literacy instruction. *Young Children*, 58(2), 52-62.
- Sapp, W.K., & Hatton, D.D. (2004). *Communication and emergent literacy vignettes, sessions 1-5*. Chapel Hill, NC: Early Intervention Training Center for Infants and Toddlers with Visual Impairments, FPG Child Development Institute, UNC-CH.
- Senéchal, M., LeFevre, J., Smith-Chant, B.L., & Colton, K. (2001). On refining theoretical models of emergent literacy: The role of empirical evidence. *Journal of School Psychology*, 39, 439-460.
- Swenson, A. (1999). *Beginning with braille: Firsthand experiences with a balanced approach to literacy*. New York: AFB Press.
- Whitehurst, G.J., & Lonigan, C.J. (1998). Child development and emergent literacy. *Child Development*, 69(3), 848-872.
- Wormsley, D.P. (1997). Fostering emergent literacy. In D. Wormsley & F. D'Andrea (Eds.), *Instructional strategies for braille literacy* (pp. 17-55). New York, NY: AFB Press.
- Wormsley, D.P. (2004). *Braille literacy: A functional approach*. New York, NY: AFB Press.

## Two critical reviews of recent literature in the field of vision impairment

Emily White

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A Critical Review of Lieberman, L. J., Haibach, P., and Schedlin, H. (2012). Physical education and children with CHARGE syndrome: Research to practice. *Journal of Visual Impairment & Blindness*, 106(2), 106-119.

Lieberman, Haibach and Schedlin (2012) researched the status of the provision of physical education to twenty-six American children with CHARGE syndrome via a parent survey. Their five areas of focus sought to create an overview of the physical education settings, modes of communication, modifications used, and the successful and unsuccessful units for students ranging from 0-18 years of age. The results demonstrated generally wide variation across all five foci, reflecting the heterogeneity of the students due to the nature of CHARGE syndrome, the range of parental knowledge regarding physical education, and the importance of an individualised approach to physical education for these students.

According to Lieberman, Haibach and Schedlin (2007), "There has been no research on the physical education placements, communication needs, effective units, modification needs or barriers faced by children with CHARGE Syndrome", and no further research besides their 2012 study could be located. Therefore, this study offers unique, albeit limited knowledge into the challenges and unique needs of this population within the physical education setting. The results show some parallels to studies by Lieberman and colleagues on physical education, activity and recreation for people who are deaf-blind (Lieberman & Stuart, 2002; Lieberman & MacVicar, 2003). The results also support current research and research-based practices on decision-making regarding the physical education placement of a student with CHARGE (Carpenter & Towers, 2008; Watson & Swim, 2007) as well as the provision of staff formally trained to work with children with disabilities (Banks, Santos, & Roof, 2003), appropriate modifications for physical education (Lieberman, 2011), and adequate communication strategies (Vacca, 2001). Other research by Haibach and Lieberman (1990) on students with CHARGE syndrome in relation to physical activity investigated the difficulties they face with balance, 'one of the most important skills associated with the successful acquisition of motor proficiency' (Ribadi, Rider, & Toole, 1987).

The previous research by Haibach and Lieberman (1990) offers some validation of this study on the status of the provision of physical education to children with CHARGE syndrome as it assists in the explanation of such varied results and offer a context for the possible discrepancy of the unreported students' experiences and perceptions of their experiences, and the reported parental perceptions. The information collected in this study only included the perceptions of parents, which were not compared against other data, such as the perceptions of their children with CHARGE or those of the physical education teachers of those children. Indeed, data collection on the physical education settings, modes of communication, modifications used, and the successful and unsuccessful units by an impartial third party using established criteria (Carpenter & Towers, 2008) may provide the most accurate information. Interestingly, Lieberman, Haibach and Schedlin (2012) seem to suggest that significant intervention by a paraprofessional or other adult in the physical education setting for students with CHARGE is highly valued and valuable, which is in contrast to several studies that

challenge such beliefs for other children with vision impairment and/or other disabilities (Corn & Koenig, 2002; Garshelis & McConnell, 1993; Li et al., 2012).

Several limitations were noted in the study by the authors, including that the parents interviewed may not have been indicative of the population as a whole, due to their especially involved nature as participants in a conference on CHARGE syndrome. Also, there could have been significant differences between the parents' understanding and perceptions of their children's physical education experiences and their children's actual experiences. Indeed, parental expectations of physical activity impact upon their children's beliefs (Boone & Crais, 1999), even though it has been shown that participation in physical activity and education is a critical component of the overall education of students with vision impairment or deaf-blindness and/or other disabilities (Gold, Shaw, & Wolffe, 2010; Matthews & Kesner, 2003; Turnbull, Turnbull, Erwin, Soodak, & Shogren, 2011). Finally, the sheer levels of difference between individuals with CHARGE syndrome regarding the manifestation of its wide ranging and complex conditions (Gavidia-Payne & Stoneman, 2004), prevents much generalisation about their collective experiences, abilities or challenges.

To summarise, though the results cannot be generalised to all students with CHARGE due to the significant limitations of the study, it nonetheless provides novel and useful information regarding the status of the provision of physical education to this population, and offers some interesting challenges to previous studies on the use of paraprofessionals for children with vision impairment. Several recommendations for further study may be made, which include determining the degree of correlation between the perceptions of parents of children with CHARGE syndrome, physical education teachers of children with CHARGE syndrome, those of children with CHARGE syndrome and data collected by an observer using established criteria for the successful inclusion of students with disabilities in physical education (Carpenter & Towers, 2008) of the status of physical education provision to children with CHARGE syndrome. Status may include the frequency and type of student physical activity in a physical education class, the types of activities provided, student ability to participate, level and types of support provided to enable participation, and Other recommendations include researching a much broader participant base as well as the reasons behind the apparent need for high levels of paraprofessional or teacher intervention for children with CHARGE syndrome in physical education settings.

While the study contains significant limitations, to the extent that it describes the status of physical education provision to twenty-six American children with CHARGE syndrome as perceived by their parents, the study offers some novel information about which factors may be crucial in the level of student success, as well as the implications for physical education placement choices, modifications, and communication strategies for such students, and suggestions for future research.

## REFERENCES

- Banks, R. A., Santos, R. M., & Roof, V. (2003). Discovering family concerns, priorities and resources: Sensitive family information gathering. *Young Exceptional Children*, 6(2), 11-19.
- Boone, H. A., & Crais, E. (1999). Strategies for achieving family-driven assessment and intervention planning. *Young Exceptional Children*, 3(1), 2-11.
- Carpenter, B., & Towers, C. (2008). Recognising fathers: the needs of fathers of children with disabilities. *Support for Learning*, 23(3), 118-125.
- Corn, A. L., & Koenig, A. J. (2002). Literacy for students with low vision: A framework for delivering instruction. *Journal of Visual Impairment & Blindness*, 96, 305-321.
- Garshelis, J. A., & McConnell, S. R. (1993). Comparison of family needs assessed by mothers, individual professionals, and interdisciplinary teams. *Journal of Early Intervention*, 17, 36-49.
- Gavidia-Payne, S., & Stoneman, Z. (2004). Family predictors of maternal and paternal involvement in programmes for young children with disabilities. In M. A. Feldman (Ed.), *Early intervention: The essential readings* (pp. 311-337). Oxford: Blackwell.

- Gold, D., Shaw, A., & Wolffe, K. (2010). The social lives of Canadian youths with visual impairments. *Journal of Visual Impairment and Blindness*, 104(7), 431-443.
- Li, Z., Ajuwon, P. M., Smith, D. W., Griffin-Shirley, N., Parker, A. T., & Okungu, P. (2012). Assistive technology competencies for teachers of students with visual impairments: A national study. *Journal of Visual Impairment & Blindness*, 106(10), 656-665.
- Matthews, M. W., & Kesner, J. (2003). Children learning with peers: The confluence of peer status and literacy competence within small-group literacy events. *Reading Research Quarterly*, 38(2), 208-234.
- Ribadi, H., Rider, R. A., & Toole, T. (1987). A comparison of static and dynamic balance in congenitally blind, sighted, and sighted blindfolded adolescents. *Adapted Physical Activity Quarterly*, 4, 220-225.
- Slentz, K. L., & Bricker, D. (1992). Family-guided assessment for IFSP development: Jumping off the family assessment bandwagon. *Journal of Early Intervention*, 16, 11-19.
- Turnbull, A., Turnbull, H. R., Erwin, E. J., Soodak, L. C., & Shogren, K. A. (2011). Meeting families' basic needs. In A. Turnbull, H. R. Turnbull, E. J. Erwin, L. C. Soodak & K. A. Shogren (Eds.), *Families, Professionals and Exceptionality: Positive Outcomes Through Partnerships and Trust* (6th ed., pp. 233-245). Upper Saddle River, NJ: Pearson.
- Vacca, J. J. (2001). Promoting positive infant-caregiver attachment: The role of the early interventionist and recommendations for parent training. *Infants and Young Children*, 13(4), 1-10.
- Watson, L. D., & Swim, T. (2007). Birth to thirty-six months: Developmental patterns. In L. D. Watson & T. Swim (Eds.), *Infants & Toddlers: Curriculum and Teaching* (6th ed., pp. 48-55; 58-59). Stamford, CT: Thomson-Delmar Learning.
- Winton, P. J., & Bailey, D. B. (1990). Early intervention training related to family interviewing. Topics in *Early Childhood Special Education*, 10, 50-62.

A Critical Review of Brown, J. E. and Beamish, W. (2012). The changing role and practice of teachers of students with visual impairments: Practitioners' views from Australia. *Journal of Visual Impairment and Blindness*, 106(2), 81-92.

Brown and Beamish (2012) examined the work practices of eight teachers of students with vision impairment (TSVIs) in Queensland to discover the breadth and complexities of the position on an everyday basis in an Australian context. Analysis of the qualitative and quantitative interview data showed a wide range of demanding duties that often required more time and/or professional support than was available. The findings demonstrate teacher belief in the Expanded Core Curriculum (Hatlen, 1996) through statements and actions, and the highly specialist nature of the TSVI position.

To the extent that the findings are localised to Queensland, they provide a rich insight into the challenges and diversity of the position, which is consistent with research about TSVIs worldwide (Correa-Torres & Howell, 2004; Griffin-Shirley, Koenig, Layton, Davidson, & et al., 2004; Morris & Sharma, 2011). While the study contains limitations in scope and study design, the results suggest that improved professional support, including adequate time, is required to ensure that TSVIs perform their tasks to a high standard. The results also suggest that further research is needed to determine whether the results can be extrapolated to all Australian states/ territories.

Previous worldwide research on the work of TSVIs describes it as complex (Griffin-Shirley et al., 2004), challenging (Swenson, 1995), diverse (Dote-Kwan, Chen, & Hughes, 2001), highly specialised (Spungin & Ferrell, 2007), isolating (Yarger & Luckner, 1999) and increasingly focused on the needs of students with additional disabilities (Pagliano, 1998; Sacks, 1998). Research by Pogrund and Cowan (2013) demonstrated that inexperienced TSVIs find valuable support from mentoring. However, the isolation due to the small size of the profession, mobile nature of the work, the small and geographically widespread population of students with vision impairments, and the vast differences in the type of work performed

increases the difficulties faced by TSVIs (Correa-Torres & Howell, 2004). This study was validated by previous research by Morris and Sharma (2011) which reflected the demanding, diverse role of TSVIs, and identified adequate time and support as their greatest and most consistent challenges.

Some limitations are present in the scope and design of the study. A small sample size was used, and excluded those without teaching qualifications in vision impairment and at least three years experience in the role. Due to current and anticipated shortages of new professionals (Billingsley, Carlson, & Klein, 2004), and a lack of research into how many TSVIs do not possess one or both qualifiers, this population may not be indicative of the profession as a whole, affecting the study's generalisability. Also, the specific interview tool used was generated by Queensland TSVIs who were 'experienced colleagues' of the first author, known through 'local knowledge'. Their level of experience was unmentioned as were the reasons why they were used to make decisions about the interview tool as opposed to existing research.

In summary, the results are far from conclusive for all TSVIs, given the small sample size and the method of generating the interview questions. Further studies are recommended utilising a greater sample size over a greater geographical area and improved transparency regarding interview tool decision-making to further our understanding of the nature of work of TSVIs and the supports required for best practice. Despite some shortcomings, to the extent that it describes the challenges and needs of the study group of eight TSVIs, the study provides useful insights and further understanding of the nature of the TSVI position, implications for professional practice and directions for future research.

## REFERENCES

- Billingsley, B. S., Carlson, E., & Klein, S. (2004). The working conditions and induction support of early career special educators. *Exceptional Children*, 70, 333-347.
- Correa-Torres, S. M., & Howell, J. J. (2004). Facing the challenge of itinerant teaching: Perspectives and suggestions from the field. *Journal of Visual Impairment & Blindness*, 98(7), 420-433.
- Dote-Kwan, J., Chen, D., & Hughes, M. (2001). A national survey of service providers who work with young children with visual impairments. *Journal of Visual Impairment & Blindness*, 95(6), 325-337.
- Griffin-Shirley, N., Koenig, A. K., Layton, C. A., Davidson, R. C., & et al. (2004). A survey of teachers of students with visual impairments: Responsibilities, satisfactions, and needs. *Re:View*, 36(1), 7-20.
- Hatlen, P. (1996). The core curriculum for blind and visually impaired students, including those with additional disabilities. *Re:View*, 28, 25-32.
- Morris, C., & Sharma, U. (2011). Facilitating the inclusion of children with vision impairment: Perspectives of itinerant support teachers. *Australasian Journal of Special Education*, 35(2), 191-203.
- Pagliano, P. (1998). Students with a vision impairment. In A. Ashman & J. Elkins (Eds.), *Educating children with special needs* (3rd ed.), pp. 383-416). Sydney: Prentice Hall.
- Pogrud, R. L., & Cowan, C. (2013). Perceptions of a statewide mentor program for new itinerant vision professionals. *Journal of Visual Impairment & Blindness*, 107(5), 351-362.
- Sacks, S. Z. (1998). Educating students who have visual impairments with other disabilities: An overview. In S. Z. Sacks & R. K. Silberman (Eds.), *Educating students who have visual impairments with other disabilities* (pp. 3-38). Baltimore, MD: Paul H. Brookes.
- Spungin, S. J., & Ferrell, K. A. (2007). The role and function of the teacher of students with visual impairments. Retrieved from <http://higherlogicdownload.s3.amazonaws.com/SPED/d2199768-679e-41f6-aa2a-e9d3b5b748c8/UploadedImages/Nov14OldPP/The%20Role%20and%20Function%20of%20the%20Teacher%20of%20Students%20with%20Visual%20Impairments%20%20for%20web%2011-14-13.doc>
- Swenson, A. M. (1995). Itinerant teaching: An insider's view. *Re:View*, 27, 113-117.
- Yarger, C., & Luckner, J. L. (1999). Itinerant teaching: The inside story. *American Annals of the Deaf*, 144, 309-314.

# **REPORT: Accessing the Australian National Curriculum- What skills and technology do blind students need?**

Shane Therese Doepel

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With acknowledgment of the provision of support with travel expenses from the Premier's IOOF Centre for Educational and Medical Research Itinerant Support Teacher (Vision) Scholarship, 2013 NSW Premier's Teacher Scholarships.

## **RESEARCH SYNOPSIS**

Australia now has a National Curriculum, yet education systems and supports for blind students in Australian states and territories vary significantly. Our National Curriculum promotes and encourages the use of new technologies to provide access to a broader range of digital curriculum resources (Australian Curriculum Assessment and Reporting Authority, 2012). Teachers today connect students with broader and richer intellectual experiences and opportunities, yet these are often not accessible to the blind student.

For the present study, in-depth interviews were conducted with 22 professional blind citizens from Australia and New Zealand. Experiences and opinions were sought about the essential skills they gained from their education that enabled them to become the successful professionals they are today. Analysis of the participants' interviews and written contributions revealed there were four clear themes of essential skills that were significant to the participants: braille skills, access technology skills, self-advocacy/ social skills and independence skills. From the four important education skills to emerge from the contributions, braille skills emerged as the most dominant and most crucial component skill.

The present study also investigated Australian and New Zealand Vision Education systems to determine best practices in vision education. These best practices were then correlated to the four themes that emerged from the responses from the blind professionals. It was found that immersion courses used in New Zealand, Victoria, South Australia and Western Australia provided targeted and relevant training for blind students.

A survey of the NSW Vision Support Teachers who participated in the study identified areas where systems need improvement. To develop state-wide quality programs and information technology systems that support blind students' access to the National Curriculum, better communication and understanding of blind students' skills are required. Partnerships are needed between blind community members, education administrators, blind teachers/role models, information technology (IT) administrators, blind technology experts and practicing vision educators.

## **KEY RECOMMENDATIONS OF THE STUDY**

- Develop a NSW Statewide Vision Resource Centre (along the lines of the Statewide Vision Resource Centre in Victoria, a system with proven success and compatibility), within the existing decentralised administration structure of the NSW Department of Education and Communities.
- Develop and deliver immersion courses for blind students in NSW along the models used by the Statewide Vision Resource Centre (Victoria), the Blind and Low Vision Education Network New Zealand (BLENNZ), the South Australian School for Vision Impaired (SASVI), and the Vision Education Service Western Australia.



- Ensure blind professionals are key partners in the development and delivery of state and federal education policy for blind students.
- Employ blind professionals as teachers and access technology experts.
- Employ blind professionals to work with NSW DEC IT departments to ensure accessibility for blind users throughout the NSW DEC IT system (including: universal design curriculum materials, network systems, websites, virtual learning environments and all multimedia classroom resources).
- Develop a more efficient and streamlined approach to the provision of access technology and technical support for blind students.

## CONCLUSIONS

Four skills that are essential for blind students' education emerged as themes from the interviews with 22 blind adult professionals. Braille emerged as the most dominant and crucial skill, with participants noting the fundamental importance of braille for literacy and numeracy. Access technology was also considered to be essential, just as technology is now essential for all professionals in the workplace today. Self-advocacy and social skills were seen as crucial skills for all blind persons, as blindness is rare and poorly understood by the general population. Independence skills are to be encouraged from a young age to set blind individuals up for a life of possibilities with confidence and curiosity.

Blind individuals need to be included as key partners in the process of developing, planning and delivering policies that address education for blind children. Understandings and partnerships among educators and departments of education, parents and administrations are keys to effectively implementing curriculum access for the blind student. False assumptions about education of blind students and access can be avoided by including blind professionals in the planning and implementation of Vision Support Education.

New Zealand's long standing partnership with blind professionals is reflected in their comprehensive, quality, national blind education programs. The country's immersion courses address the four essential skill areas identified by the blind professionals. The New Zealand approach is also employed by quality programs delivered from the Statewide Vision Resource Centre in Victoria, the South Australian School for Vision Impaired, and Vision Education Services Western Australia.

Responses to the survey of NSW Vision Support Teachers as part of this research have revealed many barriers hindering the delivery of quality education for NSW blind students. The research also found that several of our neighbouring education systems have quality programs that support essential skill development in braille, self-advocacy/social skills, independence and technology for blind students. The provision of such programs better ensures those students have the skills and resources needed to access the National Australian Curriculum.

## REFERENCE:

Australian Curriculum Assessment and Reporting Authority. (2012). *The Shape of the Curriculum, Version 4*. Retrieved from [http://www.acara.edu.au/verve/\\_resources/The\\_Shape\\_of\\_the\\_Australian\\_Curriculum\\_v4.pdf#search=students with disability](http://www.acara.edu.au/verve/_resources/The_Shape_of_the_Australian_Curriculum_v4.pdf#search=students%20with%20disability).

## REPORT: Statewide Vision Resource Centre

Deb Lewis

*Manager, SVRC, Department of Education and Early Childhood Development, Victoria*

Supporting approximately 500 students with vision impairments who attend their local schools across Victoria, the Statewide Vision Resource Centre (SVRC) offers a range of services for students, school staff, Visiting Teachers, families and the wider community. The annual Professional Development program, attended this year by over 600 participants, features opportunities for school teachers and aides to learn about the educational implications of vision impairment, along with a wide range of hands-on workshops in the ever-changing access technology options. SVRC also offers intensive programs which focus on braille, low vision, art, physical education, and educational support for students with additional impairments. This year's 'Art4Kids with VI' program was held at the National Gallery of Victoria, where Art Teacher Michael Donnelly continues to develop a strong relationship.

This year's Master class featured Penny Rosenblum who generously shared her wisdom with Visiting Teachers on topics including braille literacy development, social development, and "succeeding in a car-oriented society". Penny's handouts may be found on the SVRC website, <http://www.svrc.vic.edu.au/>.

The SVRC Production Department has produced over 4,000 titles this year in braille, etext, audio and large print format. This includes production of over 10,000 tactual graphics! The SVRC team find that our years are filled with plenty of achievements and lots of highlights, including the following:

***Survey into iPad use by Victorian students with vision impairments:*** Funded largely through the 2012-3 More Support for Students with Disabilities National Partnership, many Victorian students who are blind or have low vision now have an iPad on loan. The study explores the ways that iPads are being used at school and home to access information, interact with other equipment, and enhance the children's educational experience.

***Dot Power:*** This unique program offers students to Year 3 the opportunity to spend one day each term immersed in braille. This year's program has featured 'bodies and movement', 'number and graphing', 'me and my friends' and 'indoor/outdoor games'. The programs for this year's Dot Power days, including print, braille and audio files, may be found on the SVRC website. We are building up quite a repertoire of Dot Power songs, many of which have been written specially for the day.

***Out and About:*** Activities this year have included the audio described opera, Hansel and Gretel; a visit to the Melbourne Symphony Orchestra, and a touch tour of Inge King's sculpture exhibition at the National Gallery of Victoria. We work closely with staff of partner organisation, Guide Dogs Victoria, to ensure that these excursions offer Art, Music and O&M!

***Space Camp:*** This year, six students and two Visiting Teachers participated in the 25th Space camp for students with vision impairments at the US Space and Rocket Center in Huntsville, Alabama. From all reports, it was another life-changer – for students and staff alike! For further information about the work of the Statewide Vision Resource Centre including a wide range of free downloads pertaining to the field of vision impairment, please visit the website: [www.svrc.vic.edu.au](http://www.svrc.vic.edu.au).

## **REPORT: Vision Resource Centre Northern Territory**

Liz Christie-Johnston and Inge Carter

*Education Advisors, Department of Education - Northern Territory government*

This year we have continued to provide the best services we can to students in the NT who are blind or have vision impairment. The Vision Team consists of two Education Advisors and two Production Staff and our office is at Sanderson Middle School. We are now the only Student Services Staff based at the school which means we can no longer walk across to J block for discussions with other Disability Advisors about students that we jointly support. Instead, we rely on emails and the phone for much of this information sharing.

The Vision Team supports students who live all around the NT, from Milingimbi in Arnhem Land to Arlparra, Alice Springs and Tennant Creek in the Centre. We have students in government and non-government schools, urban, rural and remote schools. Providing a suitable service to students in very remote communities who have severe vision impairment continues to be a challenge. Fortunately, a car was left at the school for use by the Vision team. Otherwise, we would have had to travel into the city to pick up a vehicle, adding at least an extra hour to all our visits.

We work with Vision Australia and Guide Dogs SA/NT to provide the best service. Both NGOs obtain funding from the NT government on a yearly basis to assist us. Vision Australia sends an orthoptist and assistive technology consultant, and their assistance has been invaluable. Inge Carter, Senior Education Advisor Vision, is leaving at the end of 2014 and we are currently seeking a replacement. Inge's significant contribution over the past three years has been greatly appreciated. Liz Christie-Johnston will continue in her role as Education Advisor.

## **REPORT: Vision Australia's Children's Services**

Geraldine Ryan

*State Practice Leader for Victoria*

Melinda Mitchell-Daws

*Early Childhood Specialist Teacher/Key Worker*

It has been one year since we rolled out our new children's services model, across Victoria, NSW and Queensland. We are working in partnership with families of children from birth to school-leaving age and provide support to facilitate a child or young person's development and independence. We use a transdisciplinary key worker approach which means working with a family to understand their strengths, priorities and goals. All families have access to the full range of expertise in our children's services teams which include: Occupational Therapists, Physiotherapists, Speech Pathologists, Early Childhood Specialist Teachers, Child & Family Counsellors, Orientation & Mobility Specialists, Adaptive Technology Consultants, Orthoptists and our Felix library staff.

We continue to consult and work with other providers in the medical, educational and community lives of children and their families. We provide small groups in metro and regional areas as goals are identified. This has included specific groups such as the 'building social skills', 'preparing for the work force', and the 'Positive Parenting Program'. The groups may be provided as face to face groups, and across video and telephone conferencing. Feedback from a recent social skills group has included the following:

"I loved watching XXX grow in confidence with her interaction with her peers" – parent

"I liked talking about stuff and telling what happens in our lives. I like sharing our feelings about things" - child

### **VIDKIDS**

The VidKids™ pilot aims to provide services to children with hearing or vision loss living in remote and outer regional areas using video conferencing. The pilot will run until 30 June 2015. This is an innovative project funded through the federal Department of Social Services (DSS). The project utilises the increasing availability of the National Broadband Network (NBN) to stream therapy, counselling, diagnostic services, technological assistance and education support into the homes of children living in regional and remote areas of Australia. Vision Australia is a member of the expert consortium with First Voice national service network and Deaf Children Australia. Together we are providing the experience and commitment to cater for the diverse needs of children with vision and/or hearing loss.

Members of our children's services team are providing service to families in this way across Australia. For further information and to read our stories visit:

<http://www.visionaustralia.org/living-with-low-vision/children's-services/vidkids>

### **BETTER START**

Vision Australia is a registered provider with the Australian Government Better Start Initiative. The aim of Better Start is to help make early intervention services and therapies available to families by providing financial support to purchase services and equipment. The initiative complements existing Commonwealth, State and Territory services to help children have the best possible preparation for future schooling.

Registration is open to children up to six years of age who have a diagnosis of vision impairment (i.e. vision of less than or equal to 6/18 Visual Acuity, or equivalent field loss in the better eye with correction). Children who meet the eligibility will benefit from early intervention funding of up to \$12,000 in total (up to a maximum of \$6,000 per financial year). This can be utilised for therapy services or equipment purchases.

Vision Australia can work with eligible families to create positive outcomes for their child. Visit: <http://www.visionaustralia.org/living-with-low-vision/children's-services/better-start-for-children-with-disability-program>

### **NATIONAL DISABILITY INSURANCE SCHEME**

The National Disability Insurance Scheme is a new national scheme designed to help improve disability services and provide greater control and decision making to people with disability in Australia. In the trial sites of the Barwon, Hunter and Canberra areas, Vision Australia is supporting families and clients to access and register with the scheme, to identify their strengths and supports and to work towards their goals.

<http://www.visionaustralia.org/about-us/national-disability-insurance-scheme/faq's-on-the-ndis# The trial sites>

Based on a foundation of client choice and control and guided by strong values, Vision Australia is continually evolving in an ever changing environment.

## **REPORT: Round Table on Information Access for People with Print Disabilities**

Neil Jarvis

*President*

Round Table has had another good year, with a combination of consolidation and planning for our next activities. This year we have reviewed and finalised all the job descriptions for our Executive Committee, as well as for our Administration Officer. This makes life easier for anyone considering putting themselves forward for the Executive committee: they will know what is expected, and once on the committee, will be accountable for what they do.

We held a very successful conference in Brisbane in May 2014 which was attended by people from all over Australia and New Zealand. We even had delegates from North America. We have put in place a schedule for the review and updating of our popular set of guidelines on accessible information. Two working groups are being organised which will update the Accessible e-text and Accessible Assessments – both of particular relevance to your organisation, and you can expect to see the result of these reviews in 2015.

We hope to see you all at our 2015 conference will take place in in May 2015 in Adelaide. The dates and theme are as follows:

*Dates:* Saturday 2nd to Tuesday 5th of May, 2015

*Theme:* “Dynamics of information access – Current and future contexts and designs”

For email updates about the Round Table activities and the upcoming conference, please subscribe to the Round Table mailing list. Subscription details are available at:

<http://printdisability.org/communications/>

## **REPORT: Insight Education Centre for the Blind and Vision Impaired**

Maree Matthews

*Principal*

During term 1, the Insight Specialist Primary School (SPS) was established on land owned by Monash University in Berwick Victoria. Three university classrooms were modified to accommodate our beautiful students and teachers. The students were very adaptable in being oriented to a new environment. We are grateful to Monash University for their hospitality and ongoing support.

Term 2 marked the birth of our new purpose-built specialist school located at 120 Enterprise Avenue, Berwick. The Insight Specialist Primary School is well positioned for future collaboration with the Faculty of Education and other departments of Monash University. The SPS was officially opened by Dr Alan Finkel, Chancellor of Monash University at the end of term 3.

Students in the SPS attend full-time or part-time depending on their individual learning needs. All students participate in a dual curriculum: the Australian National Curriculum (AusVELS) and the Expanded Core Curriculum (ECC) for students with vision impairments. Each student has a Negotiated Individual Learning Plan which is closely monitored to ensure optimal outcomes.

Initiatives during 2014 included: opening of a Specialist Gymnastics program, planning and participating in community lunches, incursions and excursions aligned to the curriculum and the inaugural school camp. Many professionals have visited the centre of excellence throughout the year to further their professional development and understanding of students with vision impairments.

The InsightOut Mobile Classroom (MC) commenced in the middle of the year. The InsightOut MC program is a classroom on wheels that contains specialist equipment to support all blind and vision impaired students' learning needs. Currently the MC operates in mainstream schools across metropolitan Melbourne.

The SPS has a number of special features which will be showcased as part of the 2015 SPEVI conference in Melbourne.

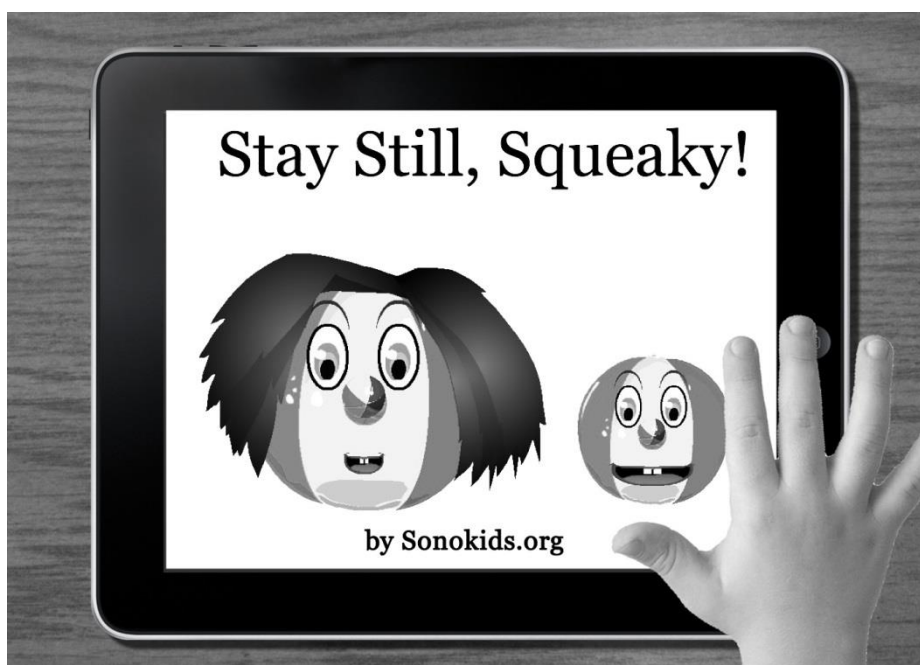
## REPORT: Sonokids Ballyland

Phia Damsma

The 2013 SPEVI Biennial Conference in Auckland set the stage for the official launch of Ballyland. Sonokids' Early Learning software introduces the computer keyboard to children who are blind or have low vision, including those with additional disabilities. Since its launch, Ballyland has achieved overwhelming success. The program featured in the Christmas competition of Wonderbaby.org, in which hundreds of parents entered with a wish to win one of three copies of Ballyland for their children with vision impairment. Around the world, a growing number of schools have implemented the program in the classroom, and therapists and parents use it with individual children. The feedback has been very positive.

The first module of Ballyland features five balls with different characters. The module is available for free trial or purchase on the Ballyland website, [www.ballyland.com](http://www.ballyland.com). A new module of the Ballyland software is currently being developed and will be available for testing at the 2015 SPEVI Conference in Melbourne. In addition, new Ballyland eBooks take the Ballylanders into the realm of the iPad. The interactive stories, available from the iStore, are visually attractive, completely audio-based, and fully accessible for children who are blind. Young children can move through the story with a simple touch of the screen, to enjoy new adventures of Squeaky and the other Ballylanders. In the first title, "Stay Still Squeaky!". Squeaky's mum warns him to keep clean, as they will soon be going away. A series of temptations – with the child in control - result in Squeaky getting dirtier and dirtier... until he bounces in the water with the ducks and comes out surprisingly clean and fresh. His unwitting mother is very pleased.

The Sonokids Ballyland team values your feedback and suggestions. Please email us at [mail@sonokids.org](mailto:mail@sonokids.org).





## **REPORT: New VI app from the Royal Institute for Deaf and Blind Children**

Owen Doyle

*Digital Media Producer, Royal Institute for Deaf and Blind Children (RIDBC)*

RIDBC received a Telstra Foundation 'Everyone Connected' Grant to create an iPad app that introduces children with vision impairment to Apple's popular VoiceOver software. The multimedia team in RIDBC Teleschool worked with Vision Ed staff to create the app. The final product is an iPad app called Discover the Park, available for sale worldwide on the iTunes Store.

Learning to use assistive technology like VoiceOver is critical for children with vision impairment and will help build a child's knowledge, skills and confidence. This app also encourages interaction and communication between children and their peers. Discover The Park is set within a typical children's playground. Children will use the VoiceOver screen reader to explore and navigate the playground. Interactive elements on the screen provide playful dialogue, engaging soundscapes and simple tasks to motivate children to explore and discover all elements on the screen.

The app consists of four levels that increase in complexity and involvement as the child's knowledge of VoiceOver develops. Level 1 introduces the child to the concept of exploring the device's screen with their finger to discover items via the VoiceOver screen reader. Each park setting was designed carefully so the child would quickly become orientated and be able to enjoy exploring the park setting. The child also learns to locate an item and 'double tap' to initiate a short and playful sound effect. The double tap is a crucial navigational skill when using VoiceOver software.

Levels 2 and 3 extend the skills learnt in Level 1. The child must listen to a question and navigate around the screen to hear and then select the correct answer. The questions are structured differently in Levels 2 and 3 so the child needs to think about the task and browse the screen before making a selection. Level 4 allows the child to select one of four park environments and record a 30 second audio clip of their voice. The child is encouraged to describe his/her day in the park. This audio recording can then be shared via the iPad's email settings.

The app also features instructional videos explaining to children and their parents how to make the most of VoiceOver on the iPad.

<https://itunes.apple.com/au/app/discover-the-park/id878879494?mt=8>  
<http://www.ridbc.org.au/discover-park>

## REPORT: UEB Online for sighted learners

Frances Gentle

*Adjunct Lecturer, RIDBC Renwick Centre/The University of Newcastle*

Trudy Smith

*Manager, Continuing Professional Education, RIDBC Renwick Centre, Royal Institute for Deaf and Blind Children*

In May 2014, RIDBC Renwick Centre launched an online training course in Unified English Braille (UEB), entitled “UEB Online for Sighted Learners”. The project team for course development consisted of RIDBC staff members, Teresa Williamson, Cathy Yu, Tricia d’Apice and Frances Gentle, with Craig Cashmore of PeppaCode contracted to provide the computing support. The costs of developing the course were offset by the philanthropic support of the Baxter Family Foundation for Children, the James N. Kirby Foundation, and the Hargrove Foundation.

UEB Online consists of 30 lessons that are sub-divided into two modules. The course content is based upon the UEB Australian training, produced by Howse, Riessen and Holloway (2013). The course may be accessed using a Mac or PC computer in conjunction with any web browser (e.g., Safari, Internet Explorer, Firefox, or Google Chrome). The course is not currently available via tablet devices such as iPads.

Free registration for the course may be completed by visiting the website, <http://uebonline.org>. Registration for new learners involves creating a login and password. This login procedure enables learners to save their progress in working through the 30 lessons, and to re-open their course profile at any time and from any computer. Lessons in the course are completed with a standard computer keyboard using specific keys to replicate the keys of a braillewriter. Marking is fully automated so that learners receive immediate feedback as they progress through each lesson. There is a substantial “getting started” section and several lesson support videos under “video resources” in the “resources” section of the website. The videos are also available via YouTube.

The number of braille learners using UEB Online has grown substantially since the course was launched in May this year. During August 2014 for example, there were 971 registered learners and 20,650 pages views across the website. In October 2014, there were 1770 registered learners who visited the website 5900 times, and accounted for 38,000 pages viewed. The four major locations of the October cohort of UEB Online learners are the United States (60% or 3585 visits), United Kingdom (16%, 933 visits), Australia (16%, 927 visits), and Canada (5%, 322 visits).

UEB Online is an ideal course for professionals, parents, and community members who wish to learn braille. It may be used by classroom teachers as a project for their students, or by specialist and mainstream educators and support staff who wish to obtain a qualification in braille. Access to the course is free of charge. For participants who require formal acknowledgement of their skills, The RIDBC Renwick Centre offers certificates of completion (subject to successful assessment) for each of the two modules, with a processing fee of \$50.00 for each module. We encourage you to visit <http://uebonline.org> to sign up and get started.

*Reference:* Howse, J., Riessen, K., Holloway, L. (2013). Unified English Braille: Australian training manual 2013. Lindisfarne, Tasmania: Round Table on Information Access for People with Print Disabilities.

## **REPORT: International Council for Education of People with Visual Impairment (ICEVI)**

Frances Gentle

*Second Vice President, ICEVI*

The International Council for Education of People with Visual Impairment (ICEVI) is an international association of individuals and organisations concerned with the education of children and youth with vision impairment. ICEVI shares with SPEVI the goal of promoting equality of access for all children and families to high quality, affordable and relevant education services and programs. At the global level and within its seven world regions, ICEVI works closely with the World Blind Union (WBU), the International Agency for the Prevention of Blindness (IAPB), United Nations (UN) agencies, the World Health Organization (WHO), international development organisations, and government and non-government providers of education, health and rehabilitation services for children and adults with vision impairment and other disabilities.

ICEVI and WBU jointly hold a General Assembly every four years. The local organising partner for the August 2016 General Assembly is the National Federation for the Blind (NFB), and it is anticipated that the event will take place in Orlando, Florida. The ICEVI-WBU Conference Program Committee is planning to include conference-style presentations on broad issues relating to the education of children and youth with vision impairment, including those with other disabilities. I sincerely hope that Australia, New Zealand as well as the Pacific Island Countries will be well represented at the 2016 General Assembly. As a member of the Program Committee, I will keep you informed of developments.

At the regional level, ICEVI and the World Blind Union (WBU) have been implementing their “Education for All Children with Visual Impairment” (EFA-VI) global campaign since its launch in 2006. The first focus EFA-VI countries in the Pacific region are Fiji and Papua New Guinea (PNG). The campaign was launched in Fiji in 2008, and included the establishment of a national EFA-VI task force of government, non-government and international stakeholders; and development of a three-year national EFA-VI plan. ICEVI supported the Fiji National EFA-VI Task Forces in securing the human, financial and physical resources that were essential to the campaign’s successful implementation. The EFA-VI campaign was launched in 2013 in PNG, and a progress update is included in their report.

ICEVI welcomes Dr James Aiwa to the position of Pacific Chairperson, and Maria Stevens to the position of Vice Chairperson. James is a lecturer at Goroka University in the Eastern Highlands Province of PNG. He stepped up to the position of Chairperson of ICEVI Pacific following the tragic loss of Paul Manning to cancer in May 2014. Also this year, James was awarded an Education Doctorate by James Cook University in Townsville Queensland, and has since returned to Papua New Guinea. Maria Stevens is employed by the Blind Foundation in New Zealand and brings to the role of ICEVI Vice Chairperson her personal and professional knowledge of vision impairment and Maori culture.

One of the privileges of holding a position of leadership with ICEVI is the opportunity it affords me to engage with individuals who are involved in projects in the Pacific region and other parts of the world. Six of these individuals have contributed to this report. Barbara Farouk presents the first of two reports on activities in the EFA-VI focus countries of Fiji and Papua New Guinea. Barbara describes two workshops provided by the Fiji Society for the Blind for professionals and families supporting young children with albinism and other types of vision impairment. In the second report, Dr James Aiwa describes the launch of the EFA-VI campaign at the first PNG Highlands Regional EFA-VI Forum. His report is followed by reports

by Kerry Tait and Michelle Manea who describe their recent activities in Tonga and Vanuatu respectively. In the fifth report, Ann Clark provides an overview of her work in Kiribati with the School for Children with Special Needs. The final report by Ben Clare describes his substantial contributions during 2014 to the educational and employment opportunities of children and adults with vision impairment in the Solomon Islands, Vanuatu, Papua New Guinea and Timor-Leste.

The six reports highlight the positive impact that training opportunities can have on the lives of children with disability and their parents, teachers, and communities. The Pacific Islands are in many ways a “paradise”, but for many children with vision impairment and other disabilities there are limited opportunities to go to school and to acquire literacy and income generation skills in order to become independent adults. Training opportunities such as those described in this report, offer much-needed knowledge and skills in how to adjust the school curriculum home and school environments in order for children with vision impairment to participate in social and learning opportunities.

## **REPORT: FIJI EFA –VI ACTIVITIES**

**Barbara Farouk**, Executive Director

### ***Early childhood care and education workshop***

In September 2014, the Fiji Society for the Blind (FSB) held its third workshop on early childhood care and education (ECCE) at the FSB headquarters in Suva, Fiji. A total of 30 participants attended the workshop and it was funded by the Fiji Community Development Program of the Australia Government, Department of Foreign Affairs and Trade. The workshop was facilitated by Mrs Tabalailai, the former Special Education Officer of the Fiji Ministry of Education. Mrs Tabalailai has wide experience and knowledge in the delivery of ECCE and was the facilitator for the first two ECCE workshops. We also invited some knowledgeable speakers from the Fiji School for the Blind who highlighted such topics as the current Fiji education system, braille skills, and activities for daily living skills. FSB offers training in ECCE every year as a way of upskilling, improving and strengthening the human resources capacities of parents, caregivers, fieldworkers, teachers, administrators, and those who are involved in the education of young children with vision impairments.

During the workshop, we identified and discussed concerns and issues relating to child development for young children with vision impairment. We also discussed the ways that families who are not accessing education services can positively impact on their children's development. The importance of current eye reports to support the academic pathway of children with vision impairment was highlighted.

Participants met with parent role models who have benefited from learning about the development of children's literacy and how to overcome challenges to bring positive changes in the lives of their children with vision impairment. FSB encourages parents to explore or experience interesting opportunities that will benefit their young children with vision impairment. Parents are encouraged to value their caregiver responsibilities and their important role in the everyday lives of their young children with vision impairment. Positive changes in the children's lives are possible if families and parents have opportunities to prepare programs for everyday activities.

The impact of the ECCE workshops will extend across Fiji, and will lead to the increased sustainability to our ECCE program.

***First Fijian Albinism Workshop, 26th November 2014***

The Fiji Society for the Blind in partnership with Fiji Ministry of Health and a team led by Dr Margot Whitfeld from St. Vincent's Hospital, Sydney, conducted a workshop aimed at providing education and resources for children with albinism, their families and teachers. Fiji School for the Blind currently has an enrolment of 11 students with albinism and supports and extra eight students who attend regular schools.

**REPORT: PAPUA NEW GUINEA HIGHLANDS EFA-VI FORUM**

**Dr James Aiwa**, Pacific Chairperson, ICEVI Pacific; and Lecturer, Goroka University, Eastern Highlands Province, PNG

The first Papua New Guinea (PNG) Highlands Regional EFA-VI Forum was held at the Mt. Sion Special Education Resource Centre (SERC) in Goroka on 1st and 2nd July 2014. Its purpose (of the Forum) was to promote primary school access and enrolment for girls and boys with blindness and low vision. The Forum was jointly financed and supported by ICEVI and the Mt. Sion SERC and coordinated by Ms Cecelia Bagore.

Over 40 participants attended the Forum, including staff from seven other SERCs, National Callan Services, University of Goroka students majoring in special education, parents and community members, and three persons with vision impairment (VI). As Goroka is in the heart of the PNG highlands, most participants travelled between 7-8 hours by road to attend the Forum, covering over 300 kilometers each way.

Among the presenters at the Highlands EFA-VI Forum were two people with vision impairment who shared their personal stories. One of them was Noah Kuns who became vision impaired after completing his grade 10 education. Noah described his journey to the Mt. Sion SERC and his acquisition of braille literacy. He then enrolled at the University of Goroka where he completed a Bachelor of Education in 2013. Noah currently works at the Mendi SERC in the Southern Highlands Province. He said that he had been totally ignored by his close friends and his parents did not attempt to find a place where he could learn braille and progress in life.

***Students with VI attending PNG schools***

Enrolment data collected by the PNG National Department of Education indicated that in 2009, there were 856 students with vision impairment (483 males and 373 females) enrolled in elementary, primary and secondary schools. During 2012 and 2013, enrolments of students with VI dropped to 630 and 665 respectively. It is noteworthy that enrolments of students with VI attending elementary (grades 1 and 2) and primary (grades 3 to 8) schools have increased in recent years, while secondary school enrolments (grades 9-12) have decreased.

With a national population of 7.3 million, school enrolment rates for students with vision impairment are relatively low. The reasons for the low enrolment rates are closely related to national problems with communication, socio-cultural multiplicity, historical influences, governance, infrastructure, transportation, poverty, attitudes towards people with disability, accessibility, specialist resources, and training (Aiwa & Pagliano, 2011). Aiwa and Pagliano's research highlighted the following hindrances to school enrolment and completion for children and youth with disabilities:

- Grades 8, 10 and 12 students to pass an entrance exam, one where few allowances are made for students with disabilities;
- Attitudes of key stakeholders towards disability; and
- Availability of resources: financial, human, specialist equipment (2011).

SERC services for students and adults with VI are concentrated in cities and major towns, rather than in rural areas where most of PNG population live. There is an unmet demand for rural-based services for persons with VI.

**Table 1 SERC services for persons with VI in eight provinces**

SERC	Province	Persons with VI	SERC programs provided
Wabag	Enga	Nil	Disability awareness in communities
Mendi	Southern Highlands	3	All enrolled in SERC-based Programs
Mt. Hagen	Western Highlands	1	Student with low vision supported in a mainstream school
Mingende	Simbu	2	Enrolled at Rosary Secondary School (grades 9 and 11)
Note: 254 persons with VI identified but not yet assisted			
Simbu	Simbu	Nil	Awareness
Mt. Sion	Eastern Highlands	20	16 students enrolled in mainstream primary schools, and four enrolled at Goroka Secondary,
Morobe	Morobe	Nil	Disability awareness in communities
Madang	Madang	21	14 persons enrolled in home-based programs, five in SERC-based programs, and two students with low vision supported in primary school

Table 1 presents a summary of the children and adults with vision impairment who are receiving services from the eight SERCs that took part in the Highlands Regional EFA-VI Forum. The table indicates that the eight SERCs provide education and community-based rehabilitation (CBR) services in school, SERC and home settings. The table also highlights the relatively small number of people with VI who are supported by the eight SERCs.

Table 2 presents a summary of the Forum discussions regarding the ongoing challenges and successes achieved in PNG by working with children and adults with VI.

**Table 2 PNG challenges and successes by working with persons with VI**

Challenges	Successes
Staff to increase in SERCs	Inclusive Education Policy
Welfare of SERC staff needs to be improved	Some students with VI have attained university diplomas/degree
SERC monitoring and evaluations by the National Department of Education NDoE	SERC teacher salaries paid by NDoE
Improved facilities	Some school administration accepting VI students

**Table 2 (cont.)**

<b>Challenges</b>	<b>Successes</b>
Resources needed, including teaching materials, braille machine and braille paper, optical devices/aids, human and technology, materials, curriculum texts, and laptops with JAWS program	Assistive Devices provided by non-government organisations
Higher institution to practice inclusive education	Success stories in Sports
Discrimination and negative attitudes towards people with VI	Self-Reliant projects for persons with VI
Skills and knowledge to teach students with VI	Job placement for persons with VI in private companies/organisations
Working environment not conducive	3 staff in SERCs are VI
Family support	
Networking among stakeholders	
Standard Data System	
Environmental access	
Funding	

**REPORT: TONGA - SUPPORTING CHILDREN AND YOUTH WITH DISABILITIES**

**Kerry Tait**, Head of Special Education Services, Narbethong Special Education Development Program, at the Narbethong Special School in Buranda Queensland.

In the last two years we have had three teams of volunteer educators and therapists visit the Mango Tree in Tonga to support families with children with disabilities. We became increasingly aware of the difficulties in that community so I approached Rotary to ask for some financial assistance to purchase equipment and resources. The Salisbury Rotary branch agreed there was a need and helped me to submit paperwork for a grant. Fortunately we were successful in obtaining an Educational grant of \$34000.

Two representatives from Tonga spent a week with us attending courses and facilities to gain skills and learn strategies to support children with Autism. This was followed in September by a team of Brisbane therapists and teachers visiting the Mango Tree in order to support an increase services to the community. The visit included an open day to increase national awareness of disability, production of a short film by Mango Tree staff to support their own fundraising, and provision of such equipment as laptops, teaching resources, canes, software and braille resources. The Brisbane team responded to the needs of the community with guidance and strategies to support children with disabilities in their homes and school.

**Report: VANUATU - Supporting children and youth with vision impairment**

Michelle Manea, Itinerant Support Teacher Vision (ISVI), NSW Department of Education and Communities

It took such a long time to organise and fundraise for my trip to Vanuatu and there were several times when I sincerely believed that I would never realise my dream. But it happened and I've learnt so much from this experience and believe that I've made a small but significant difference to a few people's lives. I took with me Jasmina Pascoe, a retired colleague, and my

husband Marc who recorded the entire adventure on film and in photographs. As a team we worked well.

We met Doriane, a woman who is single-handedly changing the views and beliefs of the Ni-Vanuatu by educating them about the abilities of children with disabilities. Doriane runs early intervention classes, advocates for children with disabilities to be enrolled in school, and visits remote communities by car and foot. She even provides medical treatment in remote communities because the local people can't get into Luganville, the only town.

Doriane took us to Hogharbour School where we met two little girls who will become braille users, and their teachers and a mum. We provided some resources and offered some strategies. Doriane has been producing braille with old X-ray film and a nail. When we showed her a slate and stylus she almost cried and within an hour was using it effectively!

In Port Vila we met Elison who is the manager of the Society for Disabled People. We sat in on an early intervention class and met the day care teacher who has a boy with VI at school with her. We also met Noella who is 15 years old and blind. Noella is gorgeous and so smart but has no opportunities to learn further as she no longer attends school and cannot enrol in the Fiji School for the Blind in Suva, Fiji. Noella can read and write basic braille, but has no opportunities to write and has no braille books to read.

Finally we met Jim Knox from the Vanuatu Department of Education. We discussed at length what is happening in Vanuatu as far as inclusive education is going and what is happening at the Vanuatu Institute of Teacher Education. Sadly we didn't get to lecture there, but perhaps next time.

We were lucky enough to visit the Fred Hollows Foundation clinic at the hospital in Santo. Everyone was "flat out" but took the time to introduce us to the doctor, ophthalmologist, nurse and some volunteers. Amazing what \$25 can do!

Since returning home, Jasmina and I have begun braille simple readers for Noella and are organising an Australian pen pal for her. We have established regular communication using email (which doesn't always work) and plan on sending braille books and more detailed advice on teaching kids with blindness and low vision. I would love to return to Vanuatu next year as Doriane on Santo would like us to visit a more remote area where the children and teachers and parents could gather in one place for a few days of intensive training.

## **REPORT: KIRIBATI**

**Ann Clark**, Teacher-trainer for teachers of children with vision impairment, Australian Volunteers International Development, Australian Department of Foreign Affairs and Trade

The teachers of students with vision impairment at the School for Children with Special Needs in Kiribati have worked exceptionally hard this year. They have shown enthusiasm and commitment to extending their knowledge of teaching and learning strategies so that current and future students with vision impairment in Kiribati will benefit from their efforts.

During the first 18 months that I spent in Kiribati, I worked as a mentor/trainer for the teachers at the School. This was a very busy and productive period and involved working with the teachers in their classrooms and providing them with training during staff meetings. During this period, I became conscious of community perception and lack of understanding of the needs of students with vision impairment. The teachers became my mentors as we worked together to introduce parents and the community to the potential of people with vision impairment.



This initial 18 month period laid the foundation for more intensive training opportunities. On returning to Kiribati in 2013, the School Committee and Principal approved an application for project funds through the Commonwealth Grants Scheme, to engage two trainers from Australia to provide the teachers with training in access technology and orientation and mobility. The aim of the project was to take the teachers out of the classroom and provide them with opportunities to concentrate on their own learning and skill development. The visits by Ben Clare in November 2013 and Tricia d'Apice in May 2014 were both very successful. A big thank you to Australian Volunteers International for supporting the submission that enabled these visits.

Ben Clare trained the School teachers in using Non-Visual Desktop Access (NVDA). Ben also worked with the students and conducted information workshops with the parents, the local UNICEF staff, and the IT staff from the Kiribati Institute of Technology. During this busy time we developed a four-level training program in NDVA that will enable the teachers to assess their students' progress and know when it was appropriate for them to move to the next level.

The aim of Tricia d'Apice's visit was to train the VI teachers in Orientation and Mobility. Tricia also worked with all School staff members, members of Te ToaMatoa (the local DPO), and the rehabilitation staff from the hospital. Tricia's training activities included games; living skills and how to quickly make tactile graphics. Tricia supported the school staff to draft an O&M manual in the Kiribati language. The manual was completed after her visit.

In addition to the access technology and O&M training, I supported the School teachers in their learning of the Unified English Braille code, using the Round Table UEB training manual. The difficulties experienced by the Kiribati teachers with the English language were overcome with a lot of practice. We spent the Christmas break completing the lessons and revising the content of the UEB manual. When the exam papers arrived from the RIDBC Renwick Centre, I don't think I have ever seen three more nervous people. The completed papers were then sent to Renwick for marking towards the end of January. There are now three teachers in Kiribati who have certificates in Braille for Educators from the Renwick Centre - two teachers with a Credit and one with a Distinction

There will be four teachers from the Kiribati School for Children with Special Needs attending the 2015 Melbourne SPEVI Conference. For three of these teachers, this will be the furthest they have travelled from Kiribati and the first time that have attended a SPEVI Conference. They are looking forward to participating, learning, gathering ideas and meeting people from other countries who are also enthusiastic about the education of their students.

## **REPORT: SOLOMON ISLANDS, VANUATU, PAPUA NEW GUINEA AND TIMOR-LESTE**

**Ben Clare**, Aspen Foundation, and Member of ICEVI Pacific

This year I have been fortunate to participate in several projects in the Pacific Region and Timor-Leste. The projects have promoted education and employment opportunities for people with vision impairment and other disabilities.

### ***Solomon Islands***

During March, I travelled to Honiara, Solomon Islands to manage an Aspen Foundation project that provides employment and study opportunities for young Solomon Islanders who are blind or have low vision. The Foundation is a part of Aspen Medical, a Canberra-based, for-profit company that provides medical infrastructure and expertise in various locations around Australia and the world. Aspen Foundation forms the company's Corporate Social Responsibility (CSR) program, where a percentage of Aspen Medical's profits are channelled into supporting charitable organisations and activities. The Foundation is also funded by

donations from the general public and fundraising activities conducted by Aspen Medical personnel.

Since 2013, the Aspen Foundation has been working with the disabled people's organisations (DPOs) and service providers that deliver education and advocacy support for Solomon Islanders who are blind and have low vision. To date, the Foundation has supported three individuals with vision impairment through the provision of laptop computers and funding to attend adaptive technology courses provided by the Solomon Islands Ministry of Health's Community Based Rehabilitation Program. The Foundation has also liaised with local businesses to facilitate the employment of people with a disability.

The Aspen Foundation has an existing partnership with the Secretariat of the Pacific Community (SPC) which runs a very successful employment program known as "Youth at Work". Participants are trained in everything from basic computing to community service, to curriculum vitae composition. Participants are offered internships with local businesses or government departments for a period of six months. Interns often graduate with fulltime employment and have gone on to build successful careers. With the assistance of the Aspen Foundation and People with Disabilities Solomon Islands (the national advocacy group), the Youth at Work program is now available to interns with a disability. One intern with a vision impairment who had experienced very little formal schooling is now working for the Solomon Islands Broadcasting Corporation, while another intern is a successful switchboard operator at the Honiara Hotel. A third intern with vision impairment is about to commence work at the office of Aspen Medical Solomon Islands.

### ***Vanuatu***

In October, I visited Vanuatu to lay the foundation for an Aspen Foundation project that will commence in 2015. The project will deliver training for community-based rehabilitation workers in the areas of vision impairment and early childhood intervention. The purpose of my trip was to interview representatives of various disability advocacy groups and service providers to see whether or not the Aspen Foundation could be of assistance. One such organisation is the Vanuatu Society for Disabled People (VSDP,) also known as the Vanuatu Society for People with Disability. Founded in 1986, VSDP currently conducts early childhood and community-based rehabilitation services in Port Vila and surrounding districts and islands. VSDP receives financial support through such donors as the Australian and New Zealand governments. With funding from NZAID, VSDP will be employing four additional CBR workers who have requested training in the areas of early childhood and vision impairment to better serve their clients and families. I will be conducting the training on behalf of the Aspen Foundation, with funding also from the Foundation for relevant study materials and toys.

### ***Papua New Guinea***

I have been associated with PNG services for people who are blind or have low vision since conducting the first computer training course involving screen readers in 2004. In recent years, partnerships have been established between national and international donor agencies to promote and support educational opportunities for children and youth with vision impairment. My involvement with such projects is made possible through collaborative partnerships between Callan Services for Disabled Persons, CBM (Christian Blind Mission), the New Zealand Government, UNICEF, and BLENNZ (Blind and Low Vision Education Network New Zealand).

The first PNG project this year involved the establishment of national braille production centres in Wewak and Goroka. The first stage of the project included the purchase and installation of such adaptive technology as braille embossers, braille production software, and computers with screen reading software. The two braille production centres will support inclusive education plans which are being rolled out across PNG with the endorsement of the PNG national and provincial education departments. The second stage of the project was the

provision of intensive training workshops during August and November for the Callan Services staff in Wewak and Goroka who will be responsible for production of brailled educational materials.

The second PNG project relates to the establishment of a PNG Reference Group that is developing a five-year national inclusive education model for children with vision impairment. In September, I participated in the first planning meeting of the Working Group that was held in Goroka. Membership of the Working Group includes staff of Callan Services and other national stakeholders in education for people with vision impairment. The group also includes Frances Gentle of RIDBC, and Sharon Duncan and Alison Prskawetz of BLENNZ.

### ***Timor-Leste***

I was fortunate to travel to Timor-Leste in September with Tricia d'Apice of RIDBC. The purpose of the trip was to provide an inclusive education workshop in the regional city of Same, located in the mountainous Manufahi District. The workshop was organised by Fuan Nabilan Education Centre, with funding support from the Royal Australasian College of Surgeons (RACS). Fuan Nabilan is a small education and rehabilitation centre that provides basic education and co-curricular activities for children and young adults who are blind or have low vision. The Centre's activities include braille literacy, orientation and mobility, massage, music and handicraft production. Fuan Nabilan is administered by a husband and wife who inject a significant amount of their own time and resources into the operation of the Centre. Faun Nabilan also receives some financial support from the Friends of Same group which is based in Melbourne.

The inclusive education workshop was aimed at primary and secondary school teachers from various parts of the Manufahi District. Participants were introduced to inclusive education principles and teaching methods for potential enrolling students with blindness or low vision. At the present time, the Fuan Nabilan Education Centre supports two students who are enrolled at local schools in Same.

*Acknowledgements.* I would like to personally thank the following organisations and individuals for their assistance and participation in the various activities I conducted throughout this year: Dr Frances Gentle, Ms Tricia d'Apice, Callan Services National Unit, Royal Australasian College of Surgeons, Fuan Nabilan Education Centre, Aspen Medical Australia, Vanuatu Society for People with Disability, People with Disabilities Solomon Islands, Australian Department of Foreign Affairs and Trade, Christian Blind Mission, and NZAID.

### **IN MEMORIUM**

In concluding this report, I wish to acknowledge the great loss of three Pacific leaders in the field of disability. All three have attended previous SPEVI conferences and were well respected internationally for their contributions to the lives of children and adults with a disability and their families.

Paul Manning, Executive Director, Parents of Vision Impaired New Zealand (PVI NZ)  
 Frederick Miller, Regional Disability Inclusive Development Specialist (Pacific), Department of Foreign Affairs and Trade (DFAT), Australian High Commission in Suva, Fiji. Formerly with the University of the South Pacific and the Pacific Islands Forum Secretariat  
 John Joseph, Lecturer in Vision Impairment, Callan Studies National Institute, Wewak, Papua New Guinea

### **REFERENCE:**

Aiwa, J., & Pagliano, P. (2011). The education of students with vision impairment in Papua New Guinea: A tentative review of the literature. *Journal of the South Pacific Educators in Vision Impairment*, 5(1), 50-57.

## **SPEVI Special Recognition and Tributes, 2014**

The SPEVI Committee of Management wishes to recognise the significant contributions of the following individuals to the fields of vision impairment and disability during 2014. We also pay tribute to two individuals who passed away during 2014 - Paul Manning (New Zealand), Frederick Miller (Fiji), and John Joseph (PNG).

### **QUEEN'S BIRTHDAY HONOURS 2014**

Associate Professor Carolyn Palmer of Flinders University in South Australia has been awarded an Australian Honour of Member (AM) in the General Division of the Order of Australia. The Honour is bestowed in recognition of her significant service to the community, particularly to people who are blind or have low vision. For information about Carolyn Palmer and other Australian Honours' recipients, visit the Australian government website, <http://www.itsanhonour.gov.au/>.

### **SCHOLARSHIP RECIPIENTS**

Congratulations are extended to Shane Doepel and Carly Turnbull, the 2013 and 2014 recipients of the NSW Premier's IOOF Centre for Educational and Medical Research Itinerant Support Teacher (Vision) Scholarship.

**Shane Doepel** is an Assistant Principal – Vision Support Teacher with the NSW Department of Education and Communities, and is based at the Murwillumbah Public School in NSW. A synopsis of Shane's research is included in the Reports section of the journal.

**Carly Turnbull** is an Itinerant Support Teacher Vision (ISTV) who is based at Orara High School NSW. We look forward to learning about Carly's research in a subsequent SPEVI journal.

### **RETIREMENT OF SANDIE MACKEVICIUS**

*Contributed by Geraldine Ryan, Vision Australia State Practice Leader, Children's Services, Victoria*

Sandie Mackevicius commenced at the Royal Victorian Institute for the Blind (RVIB) School in March 1978. In her career spanning 36 years, Sandie has made a significant contribution to the understanding of the needs of children who are blind or have low vision.

At the pre-school run by RVIB in Melbourne during the 1980s and 90s, Sandie had the opportunity to work on a daily basis with small groups of children. By observing them closely, Sandie and her colleagues were able to identify the way each child learnt, and to provide an enriched environment for them.

Sandie acknowledges that she was inspired by the work of Dr Lilli Nielsen, a Danish educator who visited to Melbourne and worked closely with the RVIB early childhood staff in the "Active Learning" approach. Sandie developed confidence and a deep understanding of the ways that children who are blind learn. With her colleague, Liz Haughton, she wrote two very practical books entitled "Little Steps to learning" (for children up to the age of 3 years), and "Posting the Pebbles", relating to the learning needs of children aged 3-5 years.

*“On her first visit to the dairy at the Children’s Farm, Pam was intrigued by the sound of the milk being squirted into the pail. She refused to feel the cow, but was willing to touch it’s teat. Pam’s first concept of a cow was that it was ‘like a sausage’. (Segment from Posting the Pebbles)*

Sandie’s books are easy to read and contain relevant photographs and examples that highlight how children learn. With over 10 years since their publication, the books are used in Australia and internationally.

Through her membership of SPEVI, Sandie has established close relationships with educators across the SPEVI community. She presented at international conferences and the SPEVI biennial conferences. Sandie chaired the Melbourne SPEVI conference in Melbourne in 2005. She was the president of SPEVI from 2005 to 2009, and Vice President from 2009 to 2013. Sandie’s substantial contribution to SPEVI was acknowledged last year when she was awarded Life Membership.

During her employment with RVIB and then Vision Australia, Sandie became the Senior Early Childhood Educator. In this role, Sandie mentored staff, organised professional development, and represented the organisation in the local Early Intervention field.

In 2007, Sandie decided to make a move into a leadership role, working as Team Manager for the Boronia team and then a newly-merged team at Dandenong Victoria. As Team Manager, Sandie worked closely with her team, clients and volunteers, and helped to steer them through organisational and cultural change.

Sandie will be greatly missed at Vision Australia. She will always be remembered for her passion and expertise in working with children and their families. In acknowledgement of Sandie’s legacy, the Board of Vision Australia awarded her with an individual achievement award.

Sandie is moving in to LAW (life after work) and she goes with our heartfelt thanks.

## IN MEMORIUM

**Paul Manning, October 8th 1952 - May 7th 2014**

*'The empty chair'*

*A dedication to Paul Manning, contributed by Riripeti Paine, Chair, PVI NZ*

I would like to spend this moment in dedication to Paul. I know that there are many stories that we could share and we will, for the story of Paul's life has not ended it has only just begun.

Here is mine:

I think it was about 11 years ago when my darling said to me one day, this man named Paul phoned he wants us to go to a conference in Auckland it's something to do with kids I think. He called me by name 'Watene'.

Sometime later tickets arrived and I thought this is great we are off, but I was still puzzled, who was this man Paul, how did he know who we were and who were these PVI people that we were going to meet at conference.

And then Ngarangi our son was called for surgery and low and behold it turned out to be the week before conference we couldn't possibly go, "rubbish" said Paul bring Ngarangi with you. Paul had a friend he said that would help take care of him, his friend turned out to be 'IKE' a retired guide dog, he took great care of him alright taught him a few tricks which he still uses on me today. How cool was that.

And so our journey with PVI began at a weekend similar to this.

I didn't know anyone and they didn't know me and that never mattered for we all shared the beauty of our children who are special in every way. I was asked to join the Board; I think it was during the next Conference held in Hamilton.

Hold the Tangata Whenua seat, I thought this organisation has a Tangata whenua seat not one but two, almost unheard of these days, how impressed was I by this, what an honour and privilege but also a huge responsibility, I would be tasked with upholding the rights and responsibilities of this organisation in terms of how we supported families and whanau Maori and non-Maori while also ensuring that the Treaty of Waitangi and it's mana was seeded within PVI, alongside Kitty Tuari and Andrea Lamont who had already been doing a tremendous job with the guidance of the late Joe Tuari and the then chair Pat Fox a magnificent lady who hails from Oamaru in the far south, I knew that Pat and I would get on well, why because Oamaru is my birth place of which I hold mana whenua, perfect.

Paul loved this, it would excite him to see the learning and transformation that was taking place within the organisation, we were truly becoming bicultural we were indeed unique as are our friends from Ngati Kapo.

We have held some fantastic National training weekends and conferences over the years that followed, provided support and education to our regional reps, we were all learning together about life with our children.

Paul would sit in awe of the friendships that were forming and the knowledge shared and can I say that our combined knowledge and experience is untouchable.

My love and admiration for this organisation has grown stronger each and every day, I love the rawness, being real and honest, untouched in many ways by contractual arrangements we get to choose who we sit and talk with, which battles we would fight and win. Being true to the voice of the people.

Paul and friends had built this organisation on solid foundations by parents for parents a wealth of knowledge and strength. Paul took this organisation that he held so dear to faraway places as an example of how this land and it's people still hold onto values of love and care close to their hearts.

Here in his own he has opened doors so that we can all walk through but he didn't do it alone, he could have, instead he saw the beauty of whakawhanaungatanga - togetherness and the power of parent support he took us with him.

My loving thanks must go to past and present board members chaired by both Pat Fox and Kevin Beaver.

My life has been forever enriched by the love and grace of this man who made a phone call 10 odd years ago to Watene,

for the friendship and sharing the understanding and care,  
his patience his knowing when things were not quite right

his laughter  
his belief in me  
his belief in you

his dedication and commitment

I have missed the regular phone calls the seeking of advice and support whether necessary or not his ability to know what people liked and disliked

our journeys to Parliament and discussions with it's Ministries

the fight for what's right  
the humility for humanity  
for social justice

the Consumer consortium meetings

hearing about his rose garden

his love of rugby and disgust that I would not understand it

his bright lime green suitcase  
lollies, lollies and even more lollies

But most of all I miss hearing from Paul how much he loves his family, his wife Marie and their children Clare, Lisa, Sarah, Jess, James and Heather and their families- grandchildren those born and those yet to be.

The concept of moving forward is foreign to me as Maori; we believe that we look backwards to our future that the past holds the key so then the legacy that Paul has left as a taonga should live on in the heart and soul of us all as we journey on as Parents of Vision Impaired.

I would like to read a poem from 'Te Maara a Te Atua' collection entitled 'Gifted Sands'. It speaks of a journey known as life and then please share with me a moment of remembrance.

Mai te Maara a te Atua – From Gods Garden  
Gifted Sands

The sands they rain from up above and settle at our feet.  
We look beyond to see what's held amid the white doves' beak.

Who builds sandcastles in their minds to help prepare each day.  
The sea rolls by and captures them and washes some away.

The tidal lands of which we birth are gifted "come what may" this gift of life our  
whenua settles in the bay.

The summer warmth beneath our feet twinkle thru these hands, we rest awhile and  
dream of life then paint them in the sand.

Gather gems from coastal shores across this sun kissed land, treasure and manaaki  
them as only God has planned.

We build sandcastles in our minds they help to set us free, the gentle winds will  
sprinkle them onto the olive tree.

#### **IN MEMORIUM**

##### **Frederick Max Miller 1961-2014**

Contributed by Setareki Macanawai, Pacific Disability Forum, Fiji

He was a man that stood as a beacon of light and a role model for many. Frederick Max Miller was called to rest on August 7<sup>th</sup> 2014. Mr. Miller attended primary school in Savusavu, Fiji from 1967 to 1974 and completed his secondary education in Levuka, Fiji from 1975 to 1978. Mr. Miller, being a sports person that he was, played rugby, hockey and took part in athletics, both in primary and secondary schools. He undertook courses at Corpus Christi Teachers College in Suva, Fiji from 1979 to 1982 after which he decided to take an extension at the University of the South Pacific (USP). Mr. Miller continued his studies overseas at Deakin University in Melbourne where he undertook his Masters in Health Science.

His achievements gained him respect and salute for his work as a Teacher of 17 years at Cathedral Secondary School, a Principal of Marist Champagnat Institute for 6 six years and later the regional disability coordination Officer at the Pacific Islands Forum Secretariat (PIFS) for six years.

In 2011, Mr. Miller was awarded the Disability Pasifika Award – this was awarded by the Pacific Disability Forum to honour individuals with disabilities who have made significant contribution to the delivery of services to and awareness, protection and recognition of the human rights of persons with disabilities in Pacific Islands Countries and territories.

He was the first co-chairperson (male) for the Pacific Disability Forum (PDF) and was also the first person to serve as Disability Coordination Officer for the Pacific Islands Forum Secretariat



(PIFS) from 2006-2012 and set up the Disability Service Section at the University of the South Pacific between January and June 2013.

In this role, Mr. Miller was the first person with disability to assume this position and also the first person with disability to serve as Disability Inclusive Development Regional Adviser for the Pacific, with the Australian government Department of Foreign Affairs and Trade (DFAT) in August 2013.

He was one of the three pioneers of the disability movement in the Pacific taking it up as regional initiative in 2004. He was the real driver behind the Pacific Regional Strategy on Disability from 2010 to 2014 and the Disability Policy at USP in 2013.

He is survived by his wife, Emele Naidusi Mara, daughters Maria Luvuiwai Miller and Emele Bernadette Vukialau, grandson Frederico Enrique Francisco Miller.



## About SPEVI

The South Pacific Educators in Vision Impairment (SPEVI) Inc. is the major professional association for educators of students with vision impairments in Australia, New Zealand and the South Pacific region. SPEVI acts as the professional body in matters pertaining to the education and support of preschool and school-age students who are blind, have low vision, deaf-blindness, or additional disabilities.

### **SPEVI VISION**

To promote educational systems in Australia, New Zealand and the South Pacific in which diversity is valued and disability would not be viewed as a characteristic by which to judge a student's worth.

### **SPEVI MISSION**

To stimulate professional and public debate and action on vision impairment issues and change which affect, or have the potential to affect the daily lives of children and youth who are blind and vision impaired, while emphasising concepts of inclusive, responsive school communities and interdependence between students and families within those communities where all people are valued.

### **SPEVI Aims**

- To act as the professional body in matters pertaining to the education of people with a vision impairment in Australia, New Zealand and the South Pacific region
- To stimulate research and encourage the raising of educational standards
- To promote and encourage the training of educators in vision impairment
- To evaluate and encourage the use of appropriate, up-to-date materials and technical equipment, in the education of persons with vision impairment, and to facilitate in-depth teacher education programs in the use of new techniques and technology
- To promote and encourage the interchange of information among SPEVI members and between SPEVI and other organisations that share similar interests
- To promote and encourage the utilisation of services and materials and the sharing of professional literature, opinion, and experiences
- To use all available resources to further the objectives of the Association.

### **SPEVI MEMBERSHIP**

SPEVI membership is open to educators, professionals and parent groups supporting children and adults with vision impairments.

For more information about SPEVI, visit the website, [www.spevi.net](http://www.spevi.net).

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