



Belonging, school support and communication: Essential aspects of school success for students with cerebral palsy in mainstream schools

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H I G H L I G H T S

- Students with cerebral palsy need school accommodations to enable participation.
- Teacher, parents, students and allied health collaborate to achieve inclusion.
- Qualitative methods enable experiences to be heard as evidence of success.
- Inclusive practice and pedagogy should be informed by real experiences.

A R T I C L E I N F O

Article history:

Received 30 March 2017

Received in revised form

9 November 2017

Accepted 14 November 2017

Keywords:

Inclusion

Inclusive practices

Students with disability

Cerebral palsy

Parents

A B S T R A C T

Purpose: Investigate successful school experiences for students with cerebral palsy (CP); identify and describe learning and participation at school.

Methods: A phenomenologically-informed qualitative study using in-depth interviews with students (n = 7), parents (n = 11), teachers (n = 10), principals (n = 9), and allied health (n = 10) was conducted to investigate multiple perceptions. Thematic analysis occurred within and between groups.

Results: Three themes were identified: Students belong and benefit; Classroom enablers that help; Communication is crucial.

Conclusions: Students' school experiences are enhanced by innovative classroom solutions that support classroom learning and involvement. Students rely on a diverse team that communicate well and implement individualised solutions that enable success.

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Cerebral palsy (CP) is the leading cause of physical disability in childhood (Rosenbaum, Paneth, Leviton, Goldstein, & Bax, 2007). CP is complex and non-progressive with associated conditions including epilepsy, sleep disorders, visual and hearing impairments, sensory impairments, feeding issues, respiratory problems, musculoskeletal dysfunction and chronic pain (Colver, Fairhurst, & Pharoah, 2014; Rosenbaum et al., 2007). Children are usually diagnosed early and consequently receive services from multiple medical, allied health and early intervention services (EIS) before they enter school. EIS targets the child's development, education and health, as well as family needs around disability within the context of family-centred practice (Rodger & Keen, 2010). The aim

of EIS is that by school entry, families may understand their child's physical and developmental needs and have had services from allied health disciplines who have supported their child's health and development in the early years (Davis & Gavidia-Payne, 2009).

Although substantial services may be accessed in early years to prepare for school, educational attainment of students with physical disabilities is widely known to be below that of able-bodied peers and has long-ranging consequences (Rutkowski & Riehle, 2009). In particular, adults with CP who have mobility restrictions often have reduced educational achievement and associated lack of involvement in paid work and community opportunities (Huang et al., 2013; Törnborn, Jonsson, & Sunnerhagen, 2014). Past research has highlighted many challenges for students with physical disabilities and school communities including parental hesitation to enrol their child in local mainstream schooling (Leyser & Kirk, 2004); schools lack of acknowledgement of parents

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expertise and collaborative inclusive practice (Denman, 2014); insufficient curriculum adaptation, teacher training, funding support, access to professionals skilled to support students at school, attitudinal and physical barriers in schools, and bullying and harassment (Victorian Equal Opportunity and Human Rights Commission [VEOHRC], 2012).

Students with physical disabilities are known to value participation at school and inclusion in social opportunities although challenges and barriers are often described more so than successes (Curtin & Clarke, 2005; Denman, 2014; Díez, 2010; Egilson & Hemmingsson, 2009). In reality, substantial research that has investigated the experiences of students and school personnel has identified unmet need, insufficient actions and available resources to support students to be involved in school related activity to their full potential. The participation of children with disabilities has been the subject of much discussion (Imms et al., 2015). The construct of participation comes from social models of disability, the International Classification of Functioning and Disability (ICF; World Health Organization, 2001). Students with CP are in the unique position of receiving active service from the health and medical sectors whilst attending educational institutions. However in many geographical contexts, there may be no common governing or service structure to ensure the two sectors work together for student benefit. Whilst the health sector has measured participation taking a silo approach to children, grouping according to disability type (Adair, Ullenhag, Keen, Granlund, & Imms, 2015), the education sector has taken an inclusive school approach involving differentiated learning and improved education for all students regardless of diagnosis (Bines & Lei, 2011). Inclusion is a “process of addressing and responding to the diversity of needs of all children, youth and adults through increasing participation in learning, cultures and communities, and reducing and eliminating exclusion” (UNESCO, 2009).

Research about the participation of students with CP within classrooms suggests that students with CP face barriers to involvement in school, require substantial technology and assistance to participate and have variable levels of support (Colver et al., 2011; Coster et al., 2012; Schenker, Coster, & Parush, 2005; VEOHRC, 2012). A recent systematic review suggested that the ICF may be a useful practical and theoretical guiding framework within education settings (Maxwell, Alves, & Grunland, 2012; Moretti, Alves, & Maxwell, 2012). Within the education sector, successful inclusive school experiences equate to participation and involvement in curricular and extracurricular activities in the school environment (Singal, 2008). Research to understand the enabling and challenging factors is crucial to promoting more inclusive environments for children with disabilities in schools.

Children and young people with CP experience barriers to participation in activities both inside (Coster et al., 2012; Egilson & Traustadottir, 2009a,b) and outside of school (Adair et al., 2015). United Nations Educational, Scientific and Cultural Organization (UNESCO) states that assessable educational attainment that is demonstrable of performance and achievement is dependent on active participation observed by classmates and teachers (UNESCO, 2009). Further, inclusion policy that aligns with the United Nations Rights of Children with Disability necessitates reasonable adjustments and modifications for each student to individualise their access to curriculum and assessment. However, the extent to which individual students experience success is unknown in the absence of accountability or benchmark frameworks measuring these issues (McLaughlin & Rhim, 2007; Minou, 2011).

Advances in medical and health related interventions for children with CP mean more interventions are available to children and their families. Universal classification systems are now routinely used to provide a summary of the child or young person's

functional status. The measures are: the Gross Motor Functional Classification System (GMFCS; Palisano et al., 1997), for mobility and gross movement, Manual Assessment Classification System (MACS; Eliasson et al., 2006), for hand use; and the Functional Communication Classification System (FCCS; Hidecker et al., 2011), for communication. All systems have five levels (I to V) indicating the person's capability and need for aides/support. Higher levels (IV or V) indicate higher need for equipment, technology and support to participate. Although widely used in health and medicine, such advances in functional terminology has not been extended into educational settings. One important step forward to promote the health and education sectors to work together for student benefit is the application of shared language. In this paper, we introduce readers from the education sector to such terminology to better explain the capabilities and equipment/technology needs of students with CP.

The aim of this research was to explore successful school experiences and the participation of students' with CP in mainstream classrooms. The experience of students who attended classes and school activities like other non-disabled students was of interest. Some findings from this project have been reported elsewhere (Bourke-Taylor, Cotter, Lalor & Johnson, 2017). Overall aims relevant to this paper were:

1. To explore how students with CP are participating within their regular classrooms and school environment.
2. To explore and identify strategies as determined by students, parents, teachers, principals, and allied health professionals that result in a student's successful involvement within the classroom, school curriculum and school community.

1. Methods

For this exploratory study, qualitative methodology based in phenomenology enabled investigation of participants' experiences of school success for students with CP attending mainstream schools. Phenomenology focuses on understanding the lived experience (subjective and real experience) of individuals around a phenomena—in this case, successful school experiences and participation (Creswell, 2013). Collectively, the experiences of persons who share the phenomena are compared and the essence of that shared experience is derived as common themes or an essence statement. In this study, themes were selected as the best method to present the multipronged perspective of five participant groups. In-depth interview guided by specifically designed interview guides were used to collect data. The study occurred in Melbourne, Australia. The Australian context is similar to other developed countries ratified to the Rights of People with Disabilities. Students with disabilities and their families can choose to be fully included in local schools or attend specialised settings. This research was concerned with students who attended their local school full time.

1.1. Participants and recruitment

This study sought a multipronged perspective of student and school success, seeking participants who self-identified as having experience with school success as a student, parent, teacher, principal or allied health professional with direct experience s with a person/student with CP attending local school. Purposive sampling was used to recruit participants from one state wide facility, Cerebral Palsy Education Centre provides state-wide support to 60 primary and secondary students with CP in any year and is a specialty centre that prepares and supports children with CP. This

research project was a research partnership where the researcher (primary author) was blinded to the identity of potential participants. Cerebral Palsy Education Centre management (second author), sent a blanket invitation to participate (information sheet and consent form) to over 120 children (past and present attendees) and young people with CP, their families, and approximately 40 schools. All researchers were unknown to participants and had no prior relationship, or no subsequent relationship after the research was completed. All schools had at least one student with CP within their school community and the student received services through [details removed for peer review]. Similarly, all 21 employed allied health practitioners occupational therapists (OT), physiotherapists (PT), and speech pathologists (SP) working at Cerebral Palsy Education Centre were offered the opportunity to participate. Recruitment commenced following ethical approval from Monash University Human Ethics Research Committee, the Victorian Department of Education and Early Childhood Development and the Victorian Catholic Education Office. Informed consent was required from all participants—students required additional parental consent and teachers required additional principal consent.

1.2. Data collection, management and analysis

A questionnaire tailored to each participant group collected information about participant demographics. Examples of interview questions include: *What equipment helps you to be able to do activities at school?* (student question); and *Ideally, what does successful school inclusion look like for you in terms of students with cerebral palsy?* (principal question). See Bourke-Taylor et al., 2017 for further detail. Table 1 through 5 provide summaries of participants' characteristics providing the contextual information to assist readers to understand the participant's backgrounds. Qualitative data were collected using semi-structured, single in-depth 60–90 min interviews. Interview questions were constructed in relation to tailored research questions for each participant group (Bourke-Taylor et al., 2017). All interviews were sent back to participants for verification or correction as the participant deemed appropriate. Data were analysed using an inductive process with research questions guiding identification of important and relevant descriptions, as applied in previous qualitative studies investigating phenomena (Bourke-Taylor, Howie & Law, 2010; Creswell, 2013; Patton, 2015).

Interviews were conducted on a one to one basis and were recorded and professionally transcribed verbatim. After training by the first author, five researchers conducted between 3 and 11 interviews. None of the researchers involved in the interviews or analysing data had previous associations with interviewees or Cerebral Palsy Education Centre. The second author was not involved in data collection, or analysis to maintain anonymity of participants who may have been known or identifiable to the second author. Transcribed interviews were re-identified by the first author. Data were analysed systematically using manual means (highlighting original re-identified transcripts, category maps) and using NVIVO data software (QSR International, 2015).

The data analysis process was structured and records scrupulously kept, ensuring replicability of the study. The process is described elsewhere (Bourke-Taylor et al., 2017) and graphically summarised in Fig. 1.

2. Results

Forty-seven participants were interviewed: 7 students with CP (see Table 1); 10 parents of a child or young person with CP (see Table 2); 11 teachers with a student with CP in their class (see Table 3); 9 principals where the school community included a student with CP (see Table 4); and 10 allied health professionals (see Table 5). All teachers and principals worked at primary schools. All students used computers with and without switch access at school. Four students had complex communication needs (CCN) and used an Alternative Augmentative Communication device (AAC) during the interview: either the Pragmatic Organisation Dynamic Display communication books (PODD, with communication partner) or the DynaVox speech generating device to participate during interviews. Only mothers responded to the invitation to participate. Mothers D, E, G, I and J described their children who all had complex communication needs and communicated via PODD and/or DynaVox.

Principals had substantial experience with students with disabilities at their school (ranging from fifteen to thirty years). Schools varied in size (200–500 pupils) and location (one rural, five suburban and three urban), had various experience teaching students with a disability and had received a range of continuing education (see Table 4). All allied health practitioners had received mentoring and training about working in schools from their workplace. Eight had received specific PD related to students with

Table 1
Summary of student's characteristics.

Students with cerebral palsy	Age range (years)	School Setting (all students attended full time)	Capability/disability						Equipment and technology			
			GMFCS level	MACS level	CFC level	Verbal	Speech	Vision loss	Hearing loss	Walker	Manual Wheelchair	Electric Wheelchair
Rochelle	9–12	Primary	III	II		yes	yes	no	X	X		
Katherine	6–8	Primary	V	V	IV	no	no	no		X		X
Elisa	9–12	Primary	III	II	IV	No	no	no				X
Max	13–16	Secondary	IV	IV		yes	no	no	X	X		
Samantha	13–16	Secondary	V	V	III	No	no	no		X		X
Sophia	17+	Post school vocational	V	IV	III	No	no	yes			X	X
Thomas	17+	Secondary	I	II		yes	no	no				

GMFCS = Gross Motor Function Measure (rating system I to V: V needs most assistance for mobility through to level I needs least support for mobility).

MACS = Manual Ability Classification System (rating system I to V: V has least hand function through to level I has most bilateral hand function).

CFC = Communication Function Classification System (rating system I to V: level V has most difficulty communicating with/without technology through to level I communicates with another person independently).

Table 2
Summary of mothers' characteristics.

Mothers	Mother works	Child's schooling	Child's care needs for Activities of Daily Living (ADLs)				Child's equipment needs		
			none	Mostly Independent - walking indoors, using hands, talking.	Mostly Independent — not Dressing & Showering.	Mostly dependent for self-care— not eating and drinking	Dependent all self-care	Walker	Wheelchair
A	yes	primary	X					X	
B	no	primary					X		
C	no	secondary				X		X	X
D	no	primary					X	X	X
E	yes	primary		X					X
F	yes	secondary	X						
G	yes	secondary				X		X	X
H	yes	primary		X			X	X	
I	no	primary					X	X	X
J	yes	post school					X	X	X

Table 3
Summary of teacher's characteristics.

Teacher	Number of Years Teaching Experience at Local School	Years teaching students with disability within the classroom	Attendance at Continuing Education Sessions about Students with Disabilities		
			Continuing Professional Development Workshop - offsite	Informal Education & Skills Session with PT, OT or SP	None
A	2	2	X	X	
B	7	2		X	
C	2	2			X
D	20	15	X		
E	8	First		X	
F	12	3	X		
G	4	2		X	
H	2	First		X	
I	23	First	X		
J	3	First		X	
K	8	3	X		

PT = physiotherapist.

OT = occupational therapist.

SP = speech pathologist.

Table 4
Summary of school principal's characteristics.

Principals	Teaching Experience, Experience with Students with Disability, & Professional Development.					Support Services at School				
	School locations	Teaching Experience	Teaching Experience with Students with Disability	Professional Development	Additional Degree or Higher Education Qualification	[details removed for peer review]	Other Community Disability Agency for Allied health disciplines	School Employed Educational Psychologist	Visiting Teachers Service	Education Department Speech Pathologists ^a
A	urban	25+	10		X	X	X	X	X	
B	urban	20+	20	X		X	X	X	X	X
C	suburban	30+	30+			X	X	X	X	
D	suburban	15+			X	X	X			
E	urban	30+	7			X	X			X
F	suburban	30+	7			X		X	X	X
G	suburban	30	3	X						
H	suburban	30+	10							
I	rural	20+	3							

^a Victorian Education System system employs only speech pathologists to work in local schools (occupational therapy, physiotherapy and additional speech pathology are purchased from external agencies).

physical disabilities and technology/mobility/other education, and nine had attended relevant conferences or professional workshops related to CP. All described regular contact with families (at least twice per month) either face-to-face, phone, or email. Allied health communications with schools varied.

The themes and subthemes with representational quotes from participants are described in the next section and graphically presented in Fig. 2. Three themes were identified: Students belong and benefit; Classroom enablers that help; and Communication is crucial. All names mentioned in the results are pseudonyms.

Table 5
Summary of characteristics of allied health participants.

Allied Health	Relevant years of experience*	Communication with Families of Students Served in School & Community Service			Communication with Student's Aide(s), Teacher(s) and/or Principal during visits to the school							
		Average contacts with families per month	Method of Communication			Aide(s)				Teacher(s)		Principal
			Email	Phone	Face-to-Face	Every Session	Every Session	Most Sessions	Every 2nd Session	Student Support Meetings	None	In-frequent
Physiotherapist A	5–10	1–2	X	X	X	X	X					X
Physiotherapist B	1–5	4	X	X	X	X						X
Physiotherapist C	1–5	4–8	X	X	X	X	X					X
Physiotherapist D	5–10	2–4	X	X	X	X			X		X	X
Occupational Therapist A	1–5	4	X	X	X	X	X					X
Occupational Therapist B	5–10	2–4	X	X	X	X	X					X
Speech Pathologist A	>10	2–4	X	X	X	X	X					X
Speech Pathologist B	1–5	2–4	X	X	X	X	X					X
Speech Pathologist C	1–5	2–4	X	X	X	X			X			X
Speech Pathologist D	>10	2–4	X	X	X	X						X

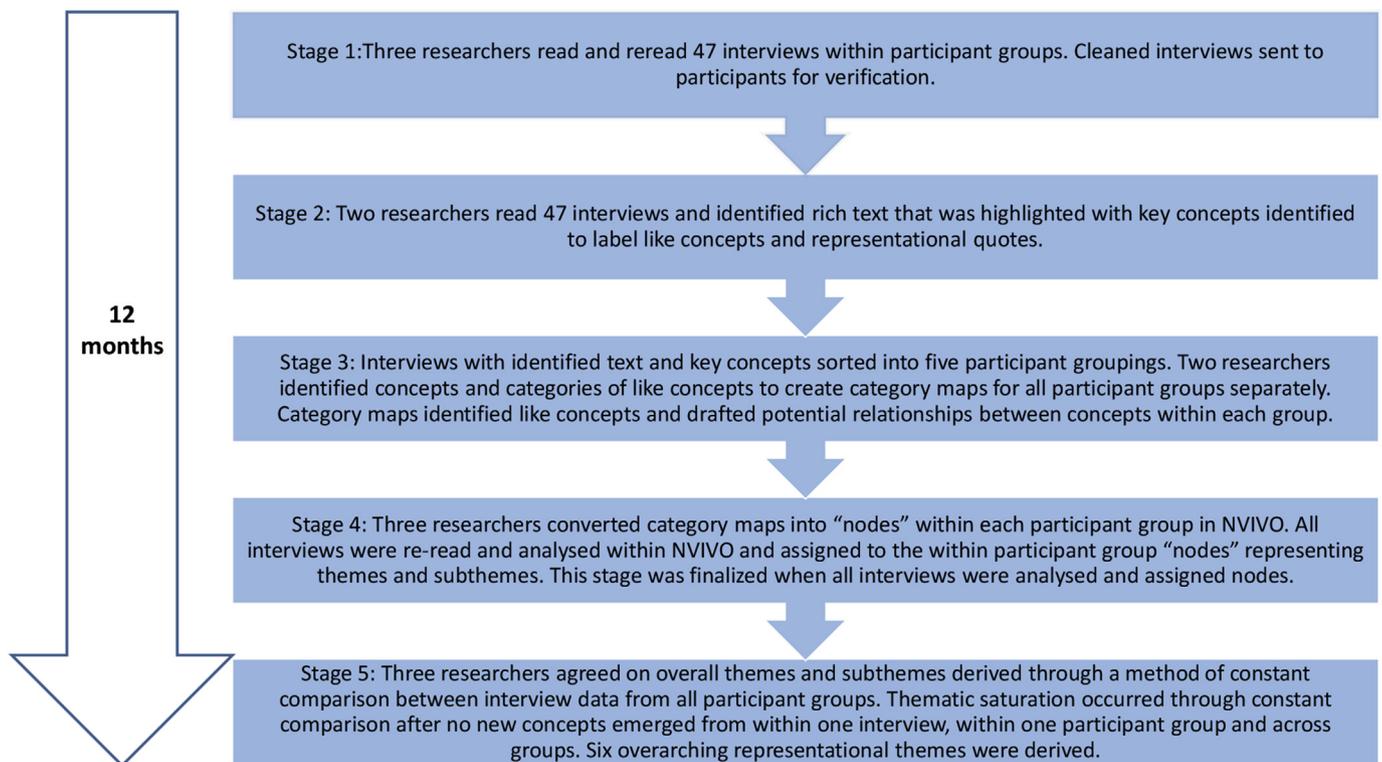


Fig. 1. Stages of data analysis process to derive overarching themes: Three researchers and 47 participant interviews.

2.1. Theme 1 students belong and benefit

All participants in this study recognised the rights and opportunities associated with attending mainstream schools alongside other neighbourhood children. Families and students valued belonging. Mother J described “when he'd come home from his

primary school he'd be upright and stimulated. As a mother, that was lovely to see.”

2.1.1. Being like everyone else

Students described common experiences—enjoying friends, playing, feeling connected to their school. Sophia shared: “The

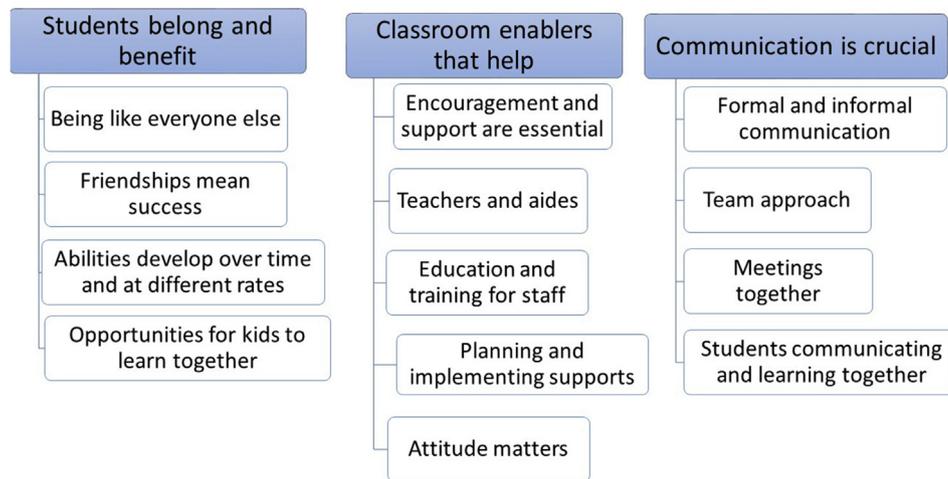


Fig. 2. Thematic analysis: Six overall themes derived and three presented in this paper.

students that were in my grade, they were absolutely fun to be with and made school enjoyable. I would sit at a table with my friends and do my work and chatting ... My best friend is absolutely awesome." Mothers celebrated their children being involved like other children including experiencing the same discipline. Mother D stated:

... behaviourally he's had a lot to learn. Since he's become so verbal with his communication device, it's opened up a whole range of ways for him to disrupt the class, deliberately, like be naughty ... [But] he's learning the rules. That you cannot start singing "happy birthday" in the middle of class time. He gets disciplined, and it's really good for him to be treated normally.

School principals emphasised the view that all students were treated equally as described by Principal C: "Inclusion is about not noticing the disability but focusing on the ability. In the environment, in the classroom, socially, they're just one of the kids (students)." Principal E shared one student's experience: "She engages with her peers, staff love her, students love her, she's fun. She's really not disadvantaged by having cerebral palsy, she just isn't learning in the same way that the other children are learning." Principal A discussed creating an inclusive school, which involved working "really hard with the school community and all of the other students accepting everybody ... the school values of respect ... If someone walks through the school ground who looks a little bit different then no one should really be looking twice ... That to me is a sign of a successful program ..." Allied health participants discussed preparing children and their families well before school to create a positive attitude to inclusion. Occupational therapist A stated that this started very early: "... we need to give these guys opportunities for success so that they can develop. It's a self-worth, self-efficacy, that they see themselves as an integral part of the community ... from a really early age ... early intervention, kinder ... before they even go to school."

2.1.2. Friendships mean success

Students echoed teacher and principal assertions that students had friendships and were connected. Max described "... every person in my school knows my name. I don't know how, they just do. Everyone says hello to me and I say hey back. So it's good that everyone gets along with me and I get along with them, so I quite enjoy it." Other students described their friends such as Elisa: "[My friends are] ... Ian and Ian has CP [and is] in a wheelchair, he's a

special friend ... and Jon ... Jenna ... [and] Mrs Smith [aide]." Katherine identified friends and "playtime" as her favourite part of the school day. When asked what she liked most about school Rochelle answered "Recess, lunch ... And going home." Rochelle had friends "do sleepovers and stuff, I invite them over."

When asked about success at school, SP A identified: "Wanting to go to school, having friends, using your communication system, having things to say, and learning." All SPs emphasised the need for children to develop reciprocal friendships and that required other children to learn to communicate using the communication method of the student with CCN. speech pathologist D said "socialising, social networks ... a good network, if they have got a good feel about who their friends are ... then they tackle things with more resilience to anything that comes their way, and they need to be. Their friendships are a big, big thing ... the number one thing." Further:

I do find that the biggest thing with friendships is helping people see the difference between everybody being nice ... saying they're a friend ... with kids who have complex communication needs who use AAC ... you cannot really be their friend unless they can use [their AAC system too]. You can be friendly but you cannot know them ... How do you know your friend if they cannot talk to you?

Teachers and therapists all supported the necessary inclusion of PODD books or high tech communication devices (Dynavox) in classrooms from school entry. Physiotherapist B summed up: "When I see children approaching the child [with CP] to communicate with the child, wanting to play with the child, I think that's a great indicator that the school has done well to really try to include the child ..."

2.1.3. Abilities develop over time and at different rates

Families valued schools that understood that learning was not the same for every child. Mothers noted that schools would sometimes overly protect their children, such as Mother A:

Sometimes they think that they need to hold her back from something and she surprises them and just wants to have a go anyway. So I think that's a good attitude. I don't think she sees herself as any different to any other kid to not know that she can do it or be entitled to try it ... even the athletics day, they did a

bit of golf, a bit of everything and she just had a go. She doesn't worry if it's not the best ...

Mother E described what success at school meant for her daughter who needed many adaptations to school activities to participate:

Success for [my child] is to be integrated in every facet of the school day. So every subject that she does, she can participate and the curriculum has to be changed and modified for her to be part of that classroom. For her, to be sitting in the same classroom, or on the sport field doing something with her peers, I think is success.

Sophia offered advice to other children with CP:

I think just be able to do as much as you can with the assistance that you've got. No matter how much your disability, how strong, how much it affects you or not. What you should try and do is to try and get the most out of that and if you can, use your aide as little as you can as well because I would only call them in and say, "Oh can you help me with this?" very, very little ... Get out and do stuff ...

2.1.4. Opportunities for 'kids' to learn together

All participants valued classrooms with children of differing abilities learning together. In particular teachers and principals emphasised the benefits of learning from each other in a healthy school environment. Teacher C described how other students in her class reacted: "I think the kids are really good with [student with CP] - they want her to be included. So that certainly helps. We as teachers, we want [student] to be included as much as possible". Teacher B talked about a student's talents and the activities that were available to the student:

She loves art ... painting ... her fine motor control is obviously not fantastic but she has a lot of assistance and she loves art, she loves music ... She has performed in both our school productions and we just had our Christmas carols on Monday ... with the support of an aide she follows along all the actions to the best of her ability.

Some teachers described initial reactions of students who did not understand the student with CPs abilities, and how classmates learned about a classmate with CP who communicated with a DynaVox:

There was one day in particular at the start of the year where it clicked ... It was a wet-day timetable and the kids had to be inside and so they all had to be around each other and these aides had programmed names into his DynaVox of all the kids in the classroom and someone said "Who's your favourite?" and he called out on his DynaVox, "Donna", one of his aides and I was like "Who's the prettiest?" and it was just hysterical because when it got to "Who's the ugliest?" it was "Mrs [G]" and he was laughing, the kids were laughing and I think they got that actually, this is a funny boy ... (Teacher G)

2.2. Theme 2 classroom enablers that help

All participants shared the main message that inspired and skilled teachers and aides made a substantial difference to students'

access to curriculum, social participation and the whole school community.

2.2.1. Encouragement and support is important

Students and families were encouraged by the support of people at school: teachers, aides and principals. Mother E reflected about her daughter, "There's really not anything she can think of that she doesn't like about school, art maybe, because it's in a different classroom, a different area of school. She finds those kinds of things very challenging but when she gets there, she loves it." Mother G stated "The [school] are interested in her ... She is the important one and the focus every time I go in there, it is about [child], it is about what [child] has done. It is not about what she hasn't done. It is all about all of the things she can do ..."

Principal I described one teacher using technology to keep her young student with CP involved in class when hospitalisation and recovery meant that he couldn't attend school, "He's in grade 2. He's brilliant. He's emailing her. He'll write the emails ... takes him a long time ... Every week, she'll be Skyping three or four times. He will present his work to the children in the classroom ... he would see them presenting work ... I just take my hat off to her"

2.2.2. Teachers and aides

Students liked and appreciated their teachers: "My teacher ... she's very funny. She makes jokes ..." (Rochelle). Mother C attributed her teenage child's success at school to "teamwork ... It's the teachers that actually really make it work ..." Allied health agreed, as summarised by speech pathologist A, "... some teachers just do it and they're awesome ... Some have whole brilliant schedules mapped out with short-term goals, long-term goals ... all sorts of problem solving happens in a good classroom ... There are so many, many things that a good teacher does."

All students except Thomas had an aide at the time of the interview. Students acknowledged the crucial role of aides who physically assisted them, such as Sophia, "When I was doing art, I felt relaxed. I felt free to express myself in my artwork ... My aides would help me, so I would have the best time ... To participate in art, all I needed was someone to set up all my equipment needed for the class. My aide would help me do this." Thomas described his experience with aides:

I've got cerebral palsy ... I had an aide at primary school ... I'd say "Can you write this" or, "Can you rule this up for me" and reminding me, particularly in my primary school, to remember to sit up straight and do all those exercises that [therapists] had set-up for me.

Speech pathologist B acknowledged how difficult the job of an aide could be, "The aides are extremely important ... a big, big plus for the aides is having those connections with the therapist ... It can be really physically tiring ... emotionally tiring, so acknowledging that it is a big job ... is really, really important." Teacher aides assisted the student to be involved. Mother G stated "I have probably come to recognise the incredible role that an aide plays with an integrated student." Many students were happy with their aides although Sophia recommended that other students with CP "go and see the principal if they think [there is] a problem with the aide" and Rochelle decided that "My aide helps me. I only like her sometimes though, because I can get frustrated with her sometimes, when she nags me. It's only some of the time I like her".

2.2.3. Education and training for staff

All teachers and principals highly valued access to educational opportunities to further their skills to support students in the classroom (see [Tables 3 and 4](#) for experience). However, as Teacher

A described, many teachers did not feel adequately prepared to support the student, “I did one unit of special education at university, where we looked at cerebral palsy for probably a week ... I did feel very limited at the beginning as to how I’d go about teaching. I’d say my professional knowledge is the biggest limitation.”

Principals described prioritising training for teachers and this occurred in a number of ways as described by Principal A:

Basically we used anyone that we could think of. Cerebral Palsy Education Centre have been enormously helpful. Cerebral Palsy Education Centre are just wonderful. We have used the various people from like [speech pathologist] and such. We have tapped into people from [local special school] and [other disability services] ... plus other organisations ... it was a multitude of people and a multitude of organisations. So it was not one thing.

Mother J reiterated what all families believed that schools needed to have: “good policy in place whereby the teachers can interact with somebody that could help them modify the curriculum so that our children can have good access to the curriculum ... it’s very tricky but that’s fundamentally important ... They’re not doing terribly different things from their peers, they’re doing the same thing but it just needs to be adapted.” Speech pathologist A summed the perspective of allied health regarding their role upskilling teachers:

“I’m supporting students with severe and multiple disabilities, most of them are in wheelchairs. Some of them have some speech, but none of them have speech as the primary mode of communication. My job is to ensure that they have the vocabulary to interact with the curriculum just like their classmates ... I’m usually working with a teacher who is not special education trained and doesn’t know how to do it. That’s my job!”

2.2.4. Planning and implementing supports

Students discussed ways that teachers, aides, allied health, adapted equipment and technology assisted them to participate in class. Rochelle gave an example: “I have a special chair for reading ... I also have a board because if I don’t have the board, my aides are worried I’ll slump down. So I’m up higher. I have a pencil grip that I like using, but I don’t like writing ... It’s easier to use a computer for me.” Max was pleased with adjustments made to enable his access to a favourite subject, cooking “my school rebuilt the whole kitchen. In one particular spot, I can fit under the table and I can see the oven ... that really helps me because I can see what I’m doing ... [my aide] helps me, it’s kind of like a two man team ... we work together and it’s really fun.” Occupational therapist B described the extent of support many children with CP needed to participate, “looking at how kids reach, grasp, release objects, pencils, handwriting, scissor skills, painting and pasting ... access to technology ... everything is continually changing and developing we need to stay on top of that ... alternate access to technology ... Other things at school, self-care ... mealtimes ... toileting ...”

Making appropriate adjustments that students found helpful required substantial planning and collaboration with others. Teachers described the creativity and time required:

I use a lot of visual support to help communicate ... I spend a lot of time modifying our activities to help [student with CP] succeed in the classroom ... it’s as simple as when you explain something to the whole class, taking the time afterwards to check in with [student] and make sure that she understands ... I

always try and get her to communicate back to me, using her PODD book rather than just a nod or a no ... (Teacher A)

... It’s been really important for (student with CP) to have that social connection ... it’s been really important to pre-plan and get his choices organised so that we can facilitate those nice social development activities for him as seamlessly as possible. Having the wheelchair and movement issues you’ve got to be adaptable ... moving things around for him. (Teacher I)

So we modify our excursions to include [student with CP], it hasn’t impacted in any way whatsoever. We go to the zoo, so we get a bus that has wheelchair access ... it’s not like she cannot come to anything. Swimming was a challenge in terms of getting changed and that was right at the beginning of the year, so we did need mum’s support and the support staff to help out with that ... she has the same experience that a lot of the other children [have], it’s just hard for her to communicate it back. (Teacher F)

None of the allied health practitioners believed that removing students from class was helpful to the student, aide or teacher. Allied health discussed the importance of assisting students, teachers and aides when the student was in class as described by physiotherapist A:

Well, a lot of people think I’m just in there to do some exercises and they’re actually quite chuffed to find you’re there to help them ... if your aide staff and your teaching staff know that ... your goal for the child is to walk a certain distance in a walker and you go to the Student Support Group [SSG] and its included in the student’s learning plan, everyone recognises that this is now an important part of the curriculum. You problem solve when to put it into the timetable, it gets practised, the child is learning to control their body, the child is keeping a healthy body, they’re building strength, they’re building control. And everyone’s happy and particularly the child ...

2.2.5. Attitude matters

Alongside skill to make the appropriate changes to the classroom and curriculum, many participants commented on the difference the personality of a teacher could make to students and families. Some teachers seemed better equipped to problem solve and think of ways to improve the student’s sense of connectedness in class. Teacher K talked about changing the way she addressed the class so as not to leave the student with CP out, describing how all students had blackboards (chalkboards) except the student with CP who used a table:

I try to not say ‘Get your blackboards’. I try and say ‘Get your blackboards or tables’ ... just saying. Oh if you’re a person who has a blackboard get a blackboard, if you’re a person who has a table get a table ... he is the only one [with a table], but hopefully just making him go ‘Actually yeah I’m okay. I am allowed to need something different and that’s fine.

Principals discussed helpful traits of teachers “confidence, that positive attitude. How can we do this? Not—‘Oh, all the problems’ ... It’s also about matching children to the right teachers. It’s about matching families to teachers and aides ... the core of our success is we believe all children have the right to learning, to quality education, to be the best they can be.” (Principal D). Teacher E described their recognition and appreciation of a child’s strengths, saying “... we’re focusing more on tracking for reading because she

cannot read out loud so we're teaching her to read in her head ... she's tracking with her fingers as somebody else is reading ... Maths is probably the activity or the area that she is strongest ... she is able to do a lot". Teacher K described her approach to communication, reflecting her motivation to accommodate her student's needs:

I try to be as absolutely natural as possible with him and speak to him like I would speak to any child ... I actually do just consider him another child in the classroom. I speak to him directly and I know that he understands everything that I say because I get vocalisation and smiles and, of course, communication through his book when we have a conversation ... If he's using the DynaVox he'll use movement with his head to move the cursor"

2.3. Theme 3 communication is crucial

There was a strong appreciation of the importance of communication, collaboration between all participant groups in this study and enabling students with CP and CCN the time and environment to communicate with others.

2.3.1. Formal and informal communication

Communication between the adult participants was formal (meetings, reports, emails, assessments, applications) and informal (conversations). Families valued schools who responded to their need to share information about their child and to hear about school: "So, communication with the school, I put that down first ... [as you] know your child the best ..." Mother F. Communication was essential for sharing of information between teacher and family, such as Teacher H, "... talking to one another and sharing information that you have, and sharing the child's successes, and not just always communicating about the challenging aspects of teaching their child. I think that's a key to having a positive relationship [with the parents]". Principal E noted that the student support group (SSG) were an important forum, "the SSGs are important because we're always seeking feedback from the parent, from all the professionals involved, including our aides because they're professionals too, about what [student with CP] needs at that time.". Principal G summed up the perspective of many regarding communication:

... communication right across the board ... people have got to know what's going on ... we support the parent at times too when things are pretty tough ... and they support us when we need assistance as well also there's the expertise of being able to go to someone like Cerebral Palsy Education Centre and say, "Look, we're having difficulties. What do you reckon?" But also, the local paediatrician ... We've actually sat down with him ... talked through what's best and what to do next.

Allied health communicated directly with aides most frequently, but preferred to communicate with teachers as well:

Lots of emails, phone calls and text messages. They're probably the three ways to contact. So I leave therapy notes. After every session, there's a copy for the family and there's a copy for the school. So one gets sent home ... Any communication that goes between myself and the school, I cc the parent in so that they're aware of what's happening from that side. I really try to make sure that it's collaborative teamwork. (Occupational therapist A)

2.3.2. Team approach

Communication between team members was important and formed the basis to effective assistance and classroom adaptations for students. Students provided informal feedback about how they were managing in school, communicating with aides, teachers and allied health. Thomas commented "... for teachers, [you need to] contact the student, the integration staff and the parent and get as much knowledge from them as you can so you know who your student is and you know what they're doing ... the same as some able-bodied kid ..." However some allied health staff emphasised the importance of assisting children to communicate so that they were active team members, or could be in the future: "The number one thing is communication. If the child is able to get their own ideas out, it means that teaching staff and assistants and therapists can really engage with the child and negotiate just like you would every other child." (physiotherapist A). Speech pathologist D described the early preparation for students with CCN at school: "So for a child who is transitioning into school, initially what we'll do is a lot of communication partner training. Which is helping the aides, or people who will be regular communication partners, how to use the child's [communication] system."

Mother C described the team approach for her child, reflecting the perspective of other parents and school staff:

[My son] is the only child with a wheelchair at the school ... And I think what makes it so successful, is the people, the teachers. It was really hard at the start because they didn't know [my son] they didn't know the family, it was really hard for us too, constant meetings trying to make them understand where we're coming from ... Well, this year's been a lot easier ... They've got education learning plans set up, they know the goals. He follows the curriculum ... it is teamwork ...

Physiotherapist D summarised the perspective of many school and allied health professionals: "Open communication ... between the entire team, the fact that there is a team is really important. You need a team of people that are all committed to the same thing ... everyone needs to be flexible ... a little bit creative ... especially as you've got some students with really complex needs ..."

2.3.3. Meetings together

Teacher F described SSG meetings where students with CP had individualised goals "for learning, separate to all the other children's goals and we meet with the OTs and the speech paths and ... physiotherapist, mum, myself, the aides and the integration aide coordinator ... Every term we meet to discuss goals and update them". Principal D further described:

At each SSG the teacher brings the individual learning plan and that's set up and parents can have input ... at the end of that meeting we have a goal that we'd like to have achieved at the end of the week, a goal for the end of the term and a goal for the end of the year and that's predominantly from the parents ... So at the end those goals are very much parent prioritised.

Physiotherapist D asserted that "the SSG looks at the student's goals, their learning plan, what they've achieved and setting new goals as well. It's a really good opportunity because sometimes it's the only chance you get where everyone is in the same room together ..."

2.3.4. Students communicating and learning together

For students with CCN, the opportunity to learn and communicate alongside other children was highly valued. Speech

pathologist A commented "... the whole class uses the communication book. It's like, let's play a shopping game, or let's talk about where we went on the weekend and everybody uses the communication book ... supporting other students to learn how to use the book ... supporting the team to understand that this is a child's voice ... creating the habits of communication everywhere, all the time." As mother B described, "... for my child, I think education is about being a great communicator [using PODD book] and being a part of a community and being able to express yourself when you have something to say." Other mothers of children with CCN agreed including Mother D:

... my main focus curriculum wise is building up his language ... I've worked with the classroom. For example they did a unit topic which was Indigenous Australians. So we went into the class, and we brainstormed all the words that the kids in the class could think of to do with it ... all the kids came up with all the words that they could think of ... then I put them into groupings, took them home, put them onto the right format on a piece of paper, and then we went back to school, and the kids actually programmed the device. So that he had [vocabulary], and this was before the subject has even started ... programming the device so that he's got the vocab ...

As an AAC user herself, Sophie commented, "Without my communication, I would not have independence." Teacher K described her classes attitude to their classmate who had CP:

... they've just been amazing ... fantastic. They always say 'Where's [name]? I need to sit next to [name] and if they get to sit on her table it's like fantastic. They communicate with the book with her all the time. She's just so much a part of our classroom that it just doesn't feel right if she's not there. They are a lovely little class ... they are so aware of her and they have learnt so much about children with special needs and, yes, she's in a wheelchair but she's still our friend and she's our classmate. I think they've really built an amazing understanding. (Teacher K)

3. Discussion

School experiences of students with disabilities are enhanced by innovative classroom solutions that support classroom learning involvement. This paper described the experience and perspectives of five stakeholder groups and provided examples of situations where students experienced inclusion, received assistance and appropriate adjustments to curriculum and classroom activities to participate at their own pace and as they were able. Strategies including teachers making individualised adjustments for the students, aides being responsive to student need, and the whole school community being aligned with an inclusion culture. Many important factors affected the classroom experience for the teacher and students. Important issues emerged around the engagement of students and families, the training and willingness of teachers to learn about the student and the role that allied health and external experts played in supporting the classroom teacher and aides. Open communication between all parties supports the student's success. The findings in this paper expand previously reported findings from this research project: collaborative partnerships between families, schools and outside organisations are important, strong school leadership is crucial to an inclusive school wide culture, and that allied health and outside expertise bring otherwise inaccessible expertise into schools, providing support to the student and teacher

(Bourke-Taylor et al., 2017).

Students and families in this study were very engaged in their school experiences. Parents were involved with the school and their child's education. Schools valued the parent's involvement. Students wanted schools to include their parents in their teams of supports. In sum, the schools described in the current study seemed to manage an inclusive approach to parents as well as students (Bourke-Taylor et al., 2017). However other research has suggested that parents can feel disconnected and unwelcome at school and such feelings compromise student success within mainstream schools (Falkmer, Anderson, Joosten, & Falkmer, 2015). Further, students with disabilities have reported varied success and support in their attendance in mainstream schools, identifying social and attitudinal barriers, teacher support and a lack of confidence in the school capacity to support them (Curtin & Clarke, 2005; Díez, 2010; Egilson & Hemmingsson, 2009).

In this study, teachers and schools celebrated what the student was achieving and recognised that differences in speed and educational attainment were acceptable. The actions and attitudes of teachers were in line with what students with CP identify as important to their inclusion (Lindsay & McPherson, 2012). Past research with students with disabilities suggests that there are substantial differences between supporting students, and expecting student's to comply with being present in the class but not necessarily actively involved (Egilson & Traustadottir, 2009a,b; Gantschnig, Hemmingsson, & La Cour, 2011). In fact, other research has identified this issue as major reason that some teachers disagree with inclusive classrooms (de Boer, Jen Pijl, & Minnaert, 2011). Our findings presented scenarios about teachers who were motivated to assist students and students were confident and felt accepted. Acceptance appeared to be a consequence of an inclusive school community: accommodating students' communication methods and mobility, self-care and education needs. Practical measures such as using and including a child's communication system in and outside class, making the school grounds physically accessible and classroom practices involving personal problem solving access to learning and social experiences were all essential features of a successful school experience.

Teacher training and willingness to learn about the student were crucial aspects of success in this study. Schools cannot build up expertise alone (Gillies, 2014). Teachers in this study worked with parents and included parent's advice and support to optimise the student's school experience. Parents offered a wealth of information about their child and teachers welcomed their collaboration. Such behaviours are easily adopted by teachers when supported by an inclusive school culture (Bourke-Taylor et al., 2017). Teachers in this study received help, training and support to modify, adapt, tailor and create solutions for daily curriculum issues. Teachers had access to allied health, collaborated with students' families, received adequate and appropriate support from school leadership, and received training from allied health within the school as well as associated professional development. Teachers need to feel confident and have adequate classroom support to best manage access for students with disabilities in both curricular and extracurricular school activities (Horne & Timmons, 2009).

When children and young people are living with a condition such as cerebral palsy, there are likely to be allied health practitioners who have useful knowledge that will benefit teachers' capacity to accommodate the student's learning needs. As occurred in this study, such allied health practitioners can offer important information about the students' health, movement, self-care and communication needs. In the current study, teachers had little prior knowledge about cerebral palsy. Past research suggests that teachers report feeling underprepared with insufficient specialised training when students need more curriculum and school

adjustments than what most differentiated learning practices can provide (de Boer et al., 2011). Limitations in teacher knowledge about inclusive practices are also known to be a barrier to student involvement in class (Díez, 2010). Resource limitations, insufficient funding and a non-inclusive culture in the school are other known features (Egilson & Hemmingsson, 2009; Falkmer et al., 2015). In the current research, teachers learned from allied health and it seems pertinent to suggest that access to allied health within schools is an important contribution to the success of inclusion in mainstream schools.

The limitations of this research relate to the generalisability of results to other geographical locations and with other school jurisdictions. However the intention of this research was to identify and describe how students with CP can succeed in school classrooms and local school environments. The ideas and examples provided are a guide to future research and also identify some of the issues that might be measured in future studies. Such research might include quantitative studies providing evidence of what supports students and in what quantity (i.e. allied health support), identification of necessary school and teacher supports that enable school performance, and successful instructive practices that deliver educational results for students with cerebral palsy, teachers and schools.

4. Conclusion

Success and participation are important constructs for people with disabilities—including students with cerebral palsy (Kramer, Olsen, Mermelstein, Balcells, & Liljenquist, 2012). Participation means that students with CP will attend, be involved, and experience reasonable adjustment within schools and classrooms (UNESCO, 2009). Students experience success when they are involved in curricular and extracurricular activities in the school environment (Dickinson & Colver, 2011; Singal, 2008). More research that measures the enabling and challenging factors is crucial to informing more inclusive practices and environments for students with CP. The current research provides a rare and important snapshot of school success for students with cerebral palsy that may assist working teachers and programs focused on teacher education to explain and apply findings to the educational advancement of students with disabilities.

Acknowledgements

This research was supported by the William Buckland Trust Fund. The authors thank occupational therapists Madelaine Hand, Rebecca Stephan, Amy Weston and Sarah Grzegorzyn for assistance at different stages of the conduction of this research.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.tate.2017.11.016>.

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