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Article

Deaf Learners' Experiences in Malaysian Schools: Access, Equality and Communication

Khairul Farhah Khairuddin [1,2,*], Susie Miles [1] and Wendy McCracken [1]

[1] School of Environment, Education and Development, University of Manchester, Manchester, M13 9PL, UK; E-Mails: khairulfarhah.khairuddin@manchester.ac.uk (K.F.K.), susie.miles@manchester.ac.uk (S.M.), wendy.mccracken@manchester.ac.uk (W.M.)
[2] Faculty of Education, National University of Malaysia, 43600 Bangi, Malaysia

* Corresponding author

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Abstract
The Government of Malaysia has embraced international policy guidelines relating to disability equality, including the United Nations Convention on the Rights of Persons with Disabilities. Its aim is to ensure that 75% of children with disabilities are included in mainstream classrooms by 2025 as part of a wider agenda to eliminate discrimination against people with disabilities. Including deaf children on an equal basis in the linguistically diverse, exam-oriented Malaysian school system is an ambitious and complex task given the difficulties they face in developing effective language and communication skills. The data presented here are taken from a larger study which explored teachers', head teachers', parents', and children's experiences of inclusion through in-depth interviews in three Malaysian schools. The study design was informed by a framework developed in the UK to guide best practice of educating deaf children in mainstream schools and focused specifically on the learning environment. This article presents contrasting educational experiences of two deaf adults, and then considers the experiences of four deaf children in their government-funded primary schools. A series of inter-related dimensions of inclusion were identified—these include curricular, organisational, social, acoustic and linguistic dimensions, which impact upon children's ability to communicate and learn on an equal basis. Poor maintenance of assistive technology, insufficient teacher training and awareness, inflexibility of the education system, and limited home-school communication are some of the factors constraining efforts to promote equal participation in learning. There are promising signs, however, of teacher collaboration and the creation of more equitable and child-centred educational opportunities for deaf children.

Keywords
cochlear implants; communication; deaf equality; deaf learners; deafness; hearing aids; inclusion; Malaysia; schools; sign language

Issue
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1. Introduction

The purpose of this article is to examine the educational experiences of two deaf adults and four primary age deaf learners in the light of the United Nations Convention on the Rights of Persons with Disabilities (CRPD). We begin by introducing the linguistically diverse Malaysian context, and by examining the influence of the CRPD and other national and international policy guidelines on the development of more inclusive and equitable quality education for deaf children.

The contrasting experiences of the 'successful' deaf adults, who were educated prior to the introduction of the national policy on inclusive education and the ratification of the CRPD, highlight a series of complex and inter-related dimensions of inclusion. They also illustrate

the 'deaf inclusion dilemma' and some of the assumptions made about disability equality in education. Although the four deaf children are being educated post-CRPD, they are experiencing barriers to their participation and learning similar to those experienced by the deaf adults. In scrutinising the education of both the adults and the children, we identify ways in which barriers to equal recognition and treatment of deaf children in mainstream settings can be overcome.

Similar to other low and middle-income countries, literature focusing on the numbers of deaf children attending different types of educational provision, and the management of technological and sign language support for deaf students in mainstream settings, is scarce in Malaysia, and, if it does exist, it is not easy to locate. The first author has played a critical role in researching policy and practice in the inclusion of deaf learners in mainstream schools, much of which is not available in the public domain or in published documents.

2. The Malaysian Context

Malaysia has an ethnically and linguistically diverse population of 31 million, which includes Malay (55%), Chinese (24%), Bumiputera (12%), Indians (8%), with other minorities constituting just 1% (Department of Statistics Malaysia, 2017). High levels of investment have been sustained in education since independence in 1957, with "6.1% of GDP" being spent on education (United Nations Development Programme, 2016, p. 231). The primary school enrolment rate is 94%, and the primary school dropout rate has been reduced to just 0.2% (Ministry of Education, 2014a).

A distinction is made in Malaysia between 'national schools' (government-funded) and 'vernacular schools' (partially government-funded). Malay is the language of instruction in mainstream government-funded schools, which are attended by 77% of children, 20% of whom speak Malay as an additional language. Vernacular schools cater to 22% of the school age population where the medium of instruction is either Mandarin or Tamil in addition to Malay and English (Ministry of Education, 2014b), and the remainder of pupils are privately educated. The study reported here focuses on three Malay-medium, government-funded 'national' primary schools.

There are approximately 3000 deaf learners in three officially recognised types of educational settings within the formal special education system in Malaysia (Special Education Division, 2013):

- Special schools (26 altogether) are mostly residential and attended by approximately 40% of deaf children. There are also twelve (12) privately owned special schools catering to 600 pupils with a range of disabilities (Ministry of Education, 2014b);
- The Special Education Integrated Programme (SEIP) (*Program Pendidikan Khas Integrasi*) was first introduced in 1963. It is now catering to approximately 60% of deaf children in 'units' attached to 23% of government-funded primary schools (N = 1345);
- The Inclusive Education Programme (IEP) (*Program Pendidikan Inklusif*) officially registers children who are included in mainstream classrooms.

The IEP was established following the Salamanca Statement (UNESCO, 1994), and through the Education Act (1996). It caters to 6% of learners with disabilities and approximately 1% of deaf children. The term 'inklusif' has been adapted from English, as there is no Malay word for 'inclusion', and is used to mean the official placement of pupils with disabilities in mainstream classrooms. The inclusion of children with disabilities in their local schools has been described as being "unconscious" (Lee & Low, 2013, p. 2) as they are not attached to either the SEIP or IEP. In this sense, the term 'inclusion' has its own particular meaning in the Malaysian school system; children are considered to be included if they attend a mainstream school without any specialist support; and 'partially included' if they spend some of their time in a mainstream classroom and the rest of the time in the SEIP (Ministry of Education, 2013a). Children with disabilities are required to pass school-based assessments before they can be accepted into the IEP (Ministry of Education, 2013a). The highly pressured and competitive examination-oriented mainstream education system is considered unsuitable for children regarded as having 'low academic ability' (Jelas & Ali, 2012).

The Persons with Disabilities Act (2008) states that, "[p]ersons with disabilities shall not be excluded from the general education system on the basis of disabilities" (Article 28, p. 24). In 2010, the Government signed and ratified the CRPD which specifies that children with disabilities have the right to access "inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live" (United Nations, 2006, Article 24). Inclusive education is defined in the national policy as the "concept of placing Special Educational Needs (SEN) students into mainstream classes to be educated alongside their peers, *either with or without additional support* and within the present school system" (Ministry of Education, 2004, p. 28, emphasis added). Interestingly, the Government recognises the limitations of its commitment by acknowledging that:

> This concept of inclusive education might not be in line with the ideal concept based on 'acceptance, belonging and about providing school settings in which all disadvantaged children can be valued equally and be provided with equal educational opportunities'. (Ministry of Education, 2004, p. 28–29)

The General Comment 4 on Article 24 (Committee on the Rights of Persons with Disabilities, 2016)—henceforth referred to as the General Comment—asserts that deaf

children have the right to access the language of instruction that is "most appropriate":

> Students who are blind, deaf or deafblind must be provided with education delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize personal, academic and social development both within and outside formal school settings. (para. 35, p. 10)

The interpretation of the term "most appropriate" is critical, and suggests that the language needs of deaf children should be met on an individual basis. The General Comment also highlights the importance of being able to communicate in all aspects of life, not just in school.

The Government has set the ambitious target of ensuring that 75% of students with disabilities, including deaf students, will be educated in mainstream classrooms by 2025 (Ministry of Education, 2013b). This is part of a wider agenda to eliminate discrimination against people with disabilities. Although this demonstrates the Government's commitment to international rights-based educational agendas, it is an ambitious target in the case of deaf children given the need to attend to individual language learning needs, including sign language, in the context of considerable linguistic and cultural diversity.

Malaysian Sign Language (MSL) is recognised by the Government as the official language of Deaf people in the Malaysian Persons with Disabilities Act (2008). The use of upper case, or capital, 'D' is used to denote membership of the social, cultural, and linguistic minority group of Deaf people who use their own native Sign language, in line with the World Federation of the Deaf (WFD) policy guidelines. It also distinguishes Deaf people from other individuals who experience hearing loss, but do not use sign language.

The language of instruction for deaf children is referred to as Total Communication, which is a combination of communication strategies, including the Hand Code of Malay, speech, finger spelling, writing and lip reading (Tee, 1990). Teachers of the deaf are trained to teach using 'Hand Code of Malay' (*Bahasa Melayu Kod Tangan*) alongside speech. This is an approach designed to support spoken Malay, and is not a language in its own right. MSL is not taught in schools in Malaysia (Yasin, Tahar, Bari, & Manaf, 2017), neither is Sign Bilingualism used.

Support for learning MSL is only provided by non-governmental organizations, such as the Malaysian Federation of the Deaf, and training for interpreters is also limited (Yusoff, 2014). Teaching instruction using other modes of communication, such as cued speech, is only provided in a private school administered by the National Deaf Association of Malaysia with little evidence of success (Yasin, Bari, & Hassan, 2013). The communication practices in Malaysian schools are therefore not in line with the WFD recommendation that:

> Quality education in the national sign language(s) and the national written language(s) is one of [the] key factors for fulfilling the education and broader human rights of deaf children and adult deaf learners (World Federation of the Deaf, 2016, p. 3).

Due to advances in the use of audiological technology in Malaysia, parents are more likely to have contact with medical professionals than with educationalists before their children start school (UNICEF Malaysia, 2014). Therefore, doctors and audiologists have the most direct influence on deaf children's mode of communication as they are involved in the initial diagnosis and the fitting of hearing aids. Cochlear implants have been provided to more than 600 severely and profoundly deaf children by the Ministry of Health since hospitals began offering this service in 1995 (Goh, Fadzilah, Abdullah, Othman, & Umat, 2018; Yusoff, Umat, & Mukari, 2017). The introduction of the Newborn Hearing Screening in 2001 has further strengthened this service (Ministry of Health, 2015).

While advanced medical services are available, guidance for parents on how to make decisions about educational provision for their deaf children is not provided (UNICEF Malaysia, 2014). Those children who receive cochlear implants and digital hearing aids are likely to be advised by medical professionals to attend their local school. In this sense, parents are not able to make informed choices about their children's education and mode of communication. Currently there are no specialist teachers available to support deaf children outside of the established special education services. Since there is no sign language support provided in mainstream schools, being able to speak is an essential prerequisite for being able to participate on an equal basis in the examination-oriented mainstream schools of Malaysia. At the same time, the high cost of hearing aids and cochlear implants limits the number of children who can benefit from this technology since not all parents can afford this. Although subsidies are available from the Government, approval of these subsidies can take up to two years and so parents often have to cover the cost of the technology and its maintenance. The availability of technology alone is not sufficient. Daily maintenance is required if it is to be used reliably and appropriately (Archbold & O'Donoghue, 2007).

3. Deaf Learners' Experiences

This study is the first of its kind in Malaysia. It took place in three government funded primary schools in Selangor, the most developed state in which the capital, Kuala Lumpur is situated. Individual semi-structured interviews (Kvale & Brinkmann, 2009) were conducted in 2016 with thirty-seven (37) participants, including two (2) deaf adults, three (3) head teachers, two (2) SEIP coordinators, three (3) SEIP teachers, five (5) mainstream teachers, two (2) teachers of the deaf, three (3) teaching assis-

tants, seven (7) parents of deaf children, seven (7) deaf children (4 boys and 3 girls aged 9 to 13) and three (3) of their hearing classmates. The aim of this larger study was to gain a better understanding of the experience of inclusion from the perspective of all the 'key actors' involved in this complex process, and especially deaf learners whose views have not been researched in the Malaysian context. In addition, individual interviews were conducted opportunistically during the main data collection period with two deaf adults who had experience of primary, secondary and tertiary education in Malaysia. The question that guides this article is: what are deaf learners' experiences of being included in education?

It proved impossible to identify a pre-existing framework in the literature that was relevant to the exploration of education stakeholders' experience of the inclusion of deaf children in low or middle-income countries. The UK's 'National Quality Standards: Resource provisions for deaf children and young people in mainstream schools' (National Deaf Children's Society & National Sensory Impairment Partnership, 2011) was adapted for use in this study, and the themes used to develop the individual semi-structured interview schedules included: positive attitudes; making reasonable adjustments; respect; friendship; communication; achievement; embedded specialist provision; training for staff; and developing acoustic settings. This study was conducted with approval from the University of Manchester's Research Ethics Committee and from the Malaysian government. The schools were identified through a shortlist of deaf children attending mainstream schools drawn up with support from two sources: the Ministry of Education and the Cochlear Implant Centre, Institute-HEARS.

The first author, a qualified teacher of the deaf from Malaysia, conducted interviews entirely in the Malay language, both spoken and signed. The children were asked to give their assent to participate and parents were contacted to give their informed consent for their child's participation. The children were free to choose their preferred mode of communication during the interview. Prior to data collection, the children were assured that their decision to participate was voluntary, that the interviews were confidential, and that participation in the study would not affect their grades. All recorded data were transcribed and analysed with computer assisted qualitative data analysis software (CAQDAS) Nvivo 10 (Gibbs, 2005). A thematic analysis approach was applied to identify patterns through a rigorous process of data familiarisation, data coding, and the development and revision of key themes (Braun & Clarke, 2006).

4. Reflecting on Contrasting Experiences of Education and Communication

Zack and Yuyu are profoundly deaf and their parents were able to afford speech therapy and early amplification. They were both educated in government-funded schools in Selangor State, but have had different experiences of the education system, largely due to the modes of communication used in the schools they attended, as illustrated by the following vignettes:

> Zack is in his early 20s, and has worn hearing aids since he was four years old, when his mother became concerned about his difficulty in speaking their home language, Malay. Zack's mother helped him to learn to speak. He attended the local school with his siblings following a speech therapist's recommendation. Zack says that it was difficult to make friends, and, "School was challenging". The teachers spoke too quickly which made it difficult for him to hear, and so he learned to focus on the teachers' lips. His parents went over his schoolwork with him in the evenings, and his secondary school teachers gave him extra tuition on a voluntary basis in break times. He passed the Malaysian Certificate of Education, completed a diploma and is currently an undergraduate student of Animal Science at a prestigious university in Malaysia. "Now", he says, "I have made a lot of friends".

The relative wealth and dedicated support of Zack's parents and his teachers' extra tuition helped Zack to maintain his hearing aids, learn to speak, and achieve academically in the exam-focused education system. Although Zack reported that he was socially isolated in school, the opportunity to interact with people from diverse backgrounds at the university has developed his confidence.

By contrast, Yuyu was educated almost entirely within the separate educational setting of the SEIP at primary and secondary level, from the 1990s onwards:

> Yuyu is in her mid-30s, and was fitted with hearing aids at the age of three, around the same time that her older brother's deafness was identified. Yuyu had regular speech therapy, but stopped wearing the hearing aids when she was ten because she "didn't find them helpful". Yuyu's parents speak Mandarin, Malay and English. Yuyu says that her first language is Malay, as she uses written Malay to communicate with those who don't know MSL. She communicates in MSL with Deaf people, although she uses some speech when communicating with her mother who has learnt to use Hand Code of Malay, and her father uses home Malay signs for individual words such as "bath, study, sleep, and eat". After completing the Malaysian Certificate of Education, Yuyu studied for her High School certificate in a mainstream school for two years before undertaking an undergraduate degree in Special Education, and has been teaching deaf children in an SEIP for about 8 years.

Having supportive parents and a deaf older brother, and being able to complete the majority of her education with other deaf children, have helped Yuyu to become an accomplished user of MSL, and prepared her well for her current profession. Being able to hear spoken language

at an early age probably helped her to establish proficient sign language skills and fully participate in the education system (Leigh & Johnston, 2004). However, Yuyu relies on written communication with people who do not know sign language. During the four-year undergraduate course, she only had occasional support from a sign language interpreter due to the university's budget restrictions and the interpreter's limited knowledge of her subjects. After graduating, Yuyu became a volunteer at a Deaf Association centre in the capital, Kuala Lumpur, where she socialises with other Deaf people. Yuyu's experience highlights the importance of gaining literacy skills as they have profound and lasting repercussions for the lives of deaf individuals (Mayer & Akamatsu, 2003).

5. Dimensions of Inclusion and Exclusion

Zack and Yuyu's educational and career trajectories highlight some of the disputes and contradictions in the practice, policy and discourse of inclusive education as they relate to the education of deaf children in Malaysia and internationally. Educational choices are usually made by parents, are often fraught with uncertainty, and have major repercussions for adult life. In low and middle-income countries information about communication modes and educational settings is not always available to parents (Leigh, Newall, & Newall, 2010).

Yuyu's deafness is a central part of her identity, and she considers herself to be a member of a linguistic minority which has its own culture and mode of communication (McIlroy & Storbeck, 2011). Indeed, Article 21 of the Salamanca Statement (UNESCO, 1994) recognises that the particular communication needs of deaf learners can sometimes justify separate educational provision. Although Yuyu was not educated in a special school, the SEIP programme has effectively created small special schools within mainstream schools, where a maximum of 8 to 10 children have full-time support, although not all teachers are specialists in deaf education. These are spaces where Deaf culture can thrive and where equal participation is possible (Jarvis, 2002).

However, the organisation of deaf children into small special 'units' means that schools are rarely able to provide the more advanced curricular access required for secondary and tertiary educational success (Angelides & Aravi, 2015). It is unlikely that Zack would have been able to study at university if he had only been exposed to the restricted curriculum available in specialist settings, yet the consequence of being the only deaf learner at school appears to have led to considerable social isolation and having to study much harder than his peers (Jarvis, 2007). At the same time, having the opportunity to learn in mainstream settings opened up career possibilities for Zack which would otherwise have remained closed. It also enabled him to have a wider friendship group (Antia, 2015), although this did not include deaf peers.

We now turn, in the next section, to the experiences of Aisyah, Akwan, Ben and Caliph, four (4) of the seven (7) children in the main study who have been selected because of the severe nature of their deafness. They have been given pseudonyms which match the first letter of their school pseudonyms: Aman, Bijak and Cherdik. Each school has over 1,500 pupils, aged 6 to 12, and has a staff of 70 to 90 teachers. Although the first author participated in school activities for two to three weeks to build rapport prior to conducting the interviews, the children were sometimes shy, and only spoke (or signed) in very short phrases. Questions were repeated several times and long pauses allowed for the children to formulate their answers. Through the children's experiences, we explore the organisational and curricular limitations of the SEIP, the social isolation of the mainstream, and the linguistic separation between these two types of educational setting.

6. Experiences in the Special Education Integrated Programme (SEIP)

Aisyah, Akwan and Ben are aged 9 to 13, and are from Malay-speaking families. They attend the SEIP in Aman and Bijak schools, respectively. Each SEIP caters to approximately 60 to 80 pupils with learning disabilities, with just seven deaf children in Aman, and eight deaf children in Bijak. The deaf children are educated in a separate classroom within the SEIP, which has its own administrative structures, separate from the mainstream school. The deaf children and teachers spend most of their time in this 'gated community'. They occasionally participate in the weekly formal school assembly and other activities in the main school, but the SEIP also organises its own separate activities, such as Sports Day. It is common for deaf children to be placed in an SEIP without a trained teacher of the deaf, and this is the case in Aman. Although the teachers in Aman have had no formal training on how to teach deaf children, they have had more than ten years' experience of teaching deaf pupils, and have studied sign vocabulary from books in their own time, and learned to sign 'on the job'.

Akwan is nine and has been wearing digital hearing aids since the age of three. His mother chose to send him to the SEIP in Aman school because she considers him too young to attend school far away from home, even though his 17-year-old brother attends a residential secondary school for deaf children. She also thinks that the SEIP provides him with more individual attention from teachers. Akwan says that he likes his hearing aids because they help him to communicate with his two classmates and his teachers. Although the SEIP is a specialist facility designed to accommodate deaf children, the walls between the classrooms are not soundproofed, and Akwan finds the background noise distracting. This is a common complaint from deaf children, especially in mainstream classrooms where there is little awareness or understanding of the importance of good acoustics, and noise reduction and management (Iantaffi, Jarvis, & Sinka, 2003). However, Akwan reports that he likes to go

to school because he has friends, and when he cannot hear clearly because of the background noise, he is able to watch the teacher signing (Jarvis, 2007).

Aisyah began to learn to sign at the age of seven when she started school. She is now thirteen and is repeating the Year 6 class. She has no hearing aids, does not speak and has a limited knowledge of the Hand Code of Malay. Her older sister has recently started to learn to sign, but Aisyah's mother refuses to believe that Aisyah is deaf, and is convinced that her difficulty in speaking is the result of a supernatural force. Aisyah is socially isolated and reported that Aman school is "boring and difficult". She has difficulty understanding lessons because of her limited language skills, the teachers find it difficult to teach abstract concepts, and Aisyah struggles to understand their explanations. As the curriculum becomes more demanding, Aisyah is falling behind.

Ben is twelve and has worn hearing aids since he was two, when he became deaf as a result of severe jaundice. His mother wanted him to speak, so she sent him to a mainstream school where he had no support from a qualified teacher of the deaf. After four years he was advised by the mainstream teachers to move to the SEIP classroom at Bijak School because he could not keep up with the fast pace of the lessons. In the SEIP he receives specialist support from two trained teachers of the deaf, the curriculum is less challenging, and the class has just three deaf children. Ben has been taught to sign and can now communicate with his two deaf classmates and participate in lessons. He now has both sign language and speech, although sign language is dominant. He enjoys school and seems happy with the pace of learning. Although Ben has access to a narrow curriculum, he has gained communication skills.

Regular exposure to an accessible language, and meaningful interactions with others who are capable users, is essential for deaf children to become literate enough to benefit from formal education (Mayer, 2007). Late identification and limited access to amplification, and the fact that more than 90% of parents of deaf children are not deaf and have no sign language skills (Mitchell & Karchmer, 2004), represent considerable barriers to equal participation in education.

7. Attending a Mainstream School without Specialist Support

Caliph is ten years old and has a profound hearing loss which was only identified at the age of eighteen months when his mother noticed his lack of response to loud noises. At the age of two, he had a cochlear implant fitted to his right ear and a hearing aid in his left ear. Caliph attends speech therapy and his mother practises with him at home. Active in an NGO for parents of deaf children, Caliph's mother is clearly both determined and committed to his overall welfare and educational development. Similar to Zack's mother, she wanted Caliph to speak the home language, Malay.

Caliph attends Cherdik School with his older brother. Caliph is the only deaf child known to be attending this school and there are no specialist teachers. The Ministry of Education does not keep records of deaf children educated in mainstream schools as they are outside the formal special education system, and so Caliph was identified for this study through the cochlear implant team.

Caliph is in a class with twenty-five students whose academic attainment is considered to be 'low', and where the curriculum has been simplified. Yet Caliph commented: "The teachers teach, but sometimes I don't understand the lesson". Caliph sits at the front with his friend, Chad. He enjoys school and plays with his friends at home after school. Caliph's difficulty in understanding may have been because his cochlear implant had not been working reliably for eight months and he was managing with one hearing aid, however, his mother was committed to solving this problem. Caliph talked about his love of sport, and about practising for Sports Day. Attending mainstream school has enabled Caliph to participate in a wide range of school activities and he has lots of friends, both at home and school.

Although it is not possible to generalise from Caliph's experience, as he is the only child in this study with a cochlear implant, having spoken language has helped him to be socially included. Reliable maintenance is, however, critical in being able to continue to develop and practise spoken language (Archbold & O'Donoghue, 2007). Even though Caliph is in a small class, he struggles to access the limited curriculum without reliable assistive technology and specialist support. The extent to which his low achievement is due to a failure of technology and appropriate communication support is difficult to establish.

8. Addressing the Deaf Inclusion Dilemma

We have argued here that it is a combination of increased political will as a result of the CRPD, as well as advances in audiological technology and related specialist knowledge, which have provided deaf learners with more equal opportunities to use their hearing more effectively and develop greater spoken language abilities (Goh et al., 2018). This, in turn, has had an impact on the choices available to deaf children and their parents. As the data have illustrated, support for children and their families in the early years is critical (Moeller, Carr, Seaver, Stredler-Brown, & Holzinger, 2013). At the same time, teacher training is not keeping pace with sign language development and technological opportunities, or with the need to promote greater deaf awareness in the education system, as recommended by the CRPD.

Cochlear implants and digital hearing aids are only effective when teachers and parents have the necessary expertise to check and maintain them. However, teachers in Malaysia have limited audiological training and so children do not gain the full benefit from this technology. In addition, the lack of coordination between the ministries of health and education means that deaf children

are not provided with equitable educational opportunities and services.

Most of the available literature on the experiences of deaf children in mainstream education focuses on high-income countries and makes assumptions about the availability of sufficient resources, including the latest technology (Bakhshi, Kett, & Oliver, 2013). A review of inclusive education in low-and-middle income countries focusing specifically on deaf children found only one paper on education in mainstream schools, as most studies focus on education in special school settings (Wapling, 2016). Limited research on the education of deaf children in low and middle-income countries means that policy makers have insufficient knowledge and understanding of how to develop, secure and sustain appropriate educational services. The General Comment provides much needed guidance for practitioners and policy makers on how to interpret and implement Article 24 for deaf learners.

The findings of our study suggest that flexibility is key to the development of more equal opportunities for deaf children. Three of the children spend most of their time in separate classrooms with only two to three classmates, within a gated community, mostly excluded from the wider school community. This separate provision can be seen as being beneficial to deaf pupils by providing them with equal opportunities to participate in learning and access the curriculum with support from specialist teachers (Lynas, 2002), but the very small number of children in these separate classrooms means that they have limited opportunity to develop communication skills and to socialise. The rigid examination-oriented curriculum within the mainstream education system makes it difficult for deaf children to follow the fast-paced lessons. In our larger study three out of five mainstream teachers interviewed were committed to supporting deaf children to remain in their classrooms. In situations where the assistive technology was not working or the child did not pass the school exams, all five of the school leaders interviewed suggested that the parents move their children to specialist settings, either the SEIP or a school for the deaf.

Increasingly, audiological technology and professional knowledge are being made available, and sometimes affordable, in developing countries (McPherson, 2008). However, regular and reliable maintenance of cochlear implants and hearing aids, and school policies which promote effective communication, such as noise reduction, lip reading, lip speaking (Archbold & O'Donoghue, 2007) and sign language (World Federation of the Deaf, 2016) are essential if deaf children are to have equal educational opportunities. Determining 'the most appropriate' language of instruction is an ongoing policy and practice challenge, especially in countries with diverse languages and ethnicities (Rhoades, Price, & Perigoe, 2004).

Equal access to spoken, written and signed communication is a pre-requisite for equal participation. In many contexts in the global South, deaf children do not have equal access to assistive technology, such as hearing aids and cochlear implants. In this case sign language is, arguably, the most appropriate language of education (McIlroy & Storbeck, 2011), as made clear in the General Comment. Although the Hand Code of Malay provides access to language in school, it does not necessarily enable communication with family members, and can lead to restricted curricular access, as our data have illustrated.

Sign bilingualism is one possible way forward, but in the context of limited resources and expertise, as in Malaysia, it is unlikely to be implemented effectively in the immediate future, and Leigh and Johnston (2004) have argued that there is a lack of evidence to support the effectiveness of this approach. Deaf children's ability to learn language and literacy skills is reduced by late identification and intervention (Lederberg, Schick, & Spencer, 2013). Indeed, children who enter school with little or no language are likely to have to spend time 'catching up', rather than having equal access to the curriculum. Parents' difficulties in accepting their children's deafness can also result in children having no mother tongue or sign language skills before they start school (Wilson, Miles, & Kaplan, 2008). Yet opportunities for parents and other family members to learn sign language are rarely available, even in highly resourced contexts (Johnston, Leigh, & Foreman, 2002). Zack, Yuyu and Caliph have all benefitted from the efforts of their dedicated parents and early exposure to spoken language, yet their parents have had limited access to sign language.

This article has not attempted to make any comparisons between the education of deaf children in special schools and those attending more mainstream provision. It is important to acknowledge that 40% of deaf children continue to be educated in special schools in Malaysia, and that this option seems likely to continue to be available as part of the continuum of provision. In contrast to the dominant view of inclusion being about 'mainstream' education, Olsson, Dag and Kullberg (2017) have argued for:

> The importance of special schools for deaf and hard-of-hearing persons when it comes to both academic and social inclusion. Social inclusion during adolescence is ultimately of great importance for becoming well integrated in society. (Olsson et l., 2017, p. 13)

They go on to argue that:

> [P]ersons with disabilities should have the possibility to live their lives under conditions that are as similar as possible to those of the rest of the population. In this case, for the studied groups, normalisation seems to be promoted by attending special school. (Olsson et al., 2017, p. 13)

9. Conclusion

This study demonstrates that the availability of advanced audiological technology has enabled an increasing num-

ber of deaf children to develop spoken language and participate in mainstream schools in Malaysia. The significance of this study is in highlighting the specific barriers faced by deaf children in achieving their educational potential. In exploring deaf children's experiences of mainstream schools, this article raises more questions than it is able to answer, such as: what is the purpose of schooling and education for deaf children; what would an equal education system look like; and how can there be more flexibility in relation to communication methods and approaches in the education of deaf children?

Meaningful communication, whether spoken, written and/or signed, is central to the equal participation of deaf learners in any type of educational setting. Our findings highlight the fact that there is little understanding of the importance of a good quality acoustic environment in Malaysian schools, including in specialist settings, and that educationalists do not have relevant training in, or responsibility for, the maintenance of assistive technology. The study also illustrates the varied communication practices taking place in schools, and the dominance of Hand Code of Malay as part of a total communication approach, rather than the structured use of MSL. The fact that professionals are beginning to collaborate with each other to promote more equal participation for deaf children shows some potential for the development of inclusive practices.

In summary, this study represents the beginning of a longer term and more complex evaluation of educational environments in Malaysia. One possible way forward is for schools to monitor the many different dimensions of inclusion (social, curricular, organisational, linguistic and acoustic) and so evaluate the effectiveness of educational provision for deaf learners. An appreciation of the importance of developing a broad range of flexible support structures in accommodating individual differences between deaf children would also be helpful in developing more equal education practices (Archbold, 2015). Deaf learners' and their families' perspectives are, arguably, an essential part of developing more comprehensive and responsive approaches to deaf equality in educational settings, and this study represents an important step in this direction.

School stakeholders, including policy makers, will need help in understanding that it is not enough to simply 'include' deaf children in a classroom environment. To include deaf learners on an equal basis in all the dimensions of inclusion identified in this article will require inter-ministerial collaboration, as well as a step change in the awareness of professionals about disability and deaf equality in education in line with the CRPD.

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Conflict of Interests

The authors declare no conflict of interests.

References

Angelides, P., & Aravi, C. (2015). A comparative perspective on the experiences of deaf and hard of hearing individuals as students at mainstream and special schools. *American Annals of the Deaf*, *151*(5), 476–487.

Antia, S. D. (2015). Enhancing academic and social outcomes: Balancing individual, family and school assets and risks for deaf children in general education. In H. Knoors & M. Marschark (Eds.), *Educating deaf learners: Creating a global evidence base* (pp. 527–546). New York: Oxford University Press.

Archbold, S. (2015). Being a deaf student. In H. Knoors & M. Marschark (Eds.), *Educating deaf learners: Creating a global evidence base* (1st ed., pp. 23–46). New York, NY: Oxford University Press.

Archbold, S., & O'Donoghue, G. M. (2007). Ensuring the long-term use of cochlear implants in children: The importance of engaging local resources and expertise. *Ear and Hearing*, *28*(2), 3S–6S.

Bakhshi, P., Kett, M., & Oliver, K. (2013). *What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?* London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Committee on the Rights of Persons with Disabilities. (2016). *General comment No. 4 (2016) on the right to inclusive education*. New York: United Nations.

Department of Statistics Malaysia. (2017). *Current population estimates 2014–2016*. Putrajaya: Department of Statistics Malaysia.

Education Act. (1996). National education system Malaysia: The Commissioner of Law Revision.

Gibbs, G. R. (2005). *Qualitative data analysis: Explorations with Nvivo*. Berkshire: Open University Press McGraw-Hill Education.

Goh, B.-S., Fadzilah, N., Abdullah, A., Othman, B. F.,

& Umat, C. (2018). Long-term outcomes of Universiti Kebangsaan Malaysia cochlear implant program among paediatric implantees. *International Journal of Pediatric Otorhinolaryngology*, *105*, 27–32.

Iantaffi, A., Jarvis, J., & Sinka, I. (2003). Deaf pupils' views of inclusion in mainstream schools. *Deafness and Education International*, *5*(3), 144–156.

Jarvis, J. (2002). Exclusion by inclusion: Issues for deaf pupils and their mainstream teachers. *Education 3-13*, *30*(2), 47–51.

Jarvis, J. (2007). "Jigsawing it together": Reflections on deaf pupils and inclusion. In R. Cigman (Ed.), *Included or excluded: The challenge of the mainstream for some SEN children* (1st ed., pp. 42–50). London: Routledge.

Jelas, Z. M., & Ali, M. M. (2012). Inclusive education in Malaysia: Policy and practice. *International Journal of Inclusive Education*, *18*(10), 1–13.

Johnston, T., Leigh, G. R., & Foreman, P. (2002). The implementation of the principles of sign bilingualism in a self-described sign bilingual program: Implications for the evaluation of language outcomes. *Australian Journal of Education of the Deaf*, *8*(1), 38–46.

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). Thousands Oaks: Sage Publications.

Lederberg, A. R., Schick, B., & Spencer, P. E. (2013). Language and literacy development of deaf and hard-of-hearing children: Successes and challenges. *Developmental Psychology*, *49*(1), 15–30.

Lee, L. W., & Low, H. M. (2013). "Unconscious" inclusion of students with learning disabilities in a Malaysian mainstream primary school: Teachers' perspectives. *Journal of Research in Special Educational Needs*, *13*(3), 218–228.

Leigh, G., & Johnston, T. (2004). First language learning in a sign bilingual program: An Australian study. *NTID Research Bulletin*, *9*(2/3), 1–5.

Leigh, G., Newall, J. P., & Newall, A. T. (2010). Newborn screening and earlier intervention with deaf children: Issues for the developing world. In M. Marschark & P. E. Spencer (Eds.), *The Oxford handbook of deaf studies, language, and education* (Vol 2, pp. 345–359). New York, NY: Oxford University Press.

Lynas, W. (2002). Speacialist teachers and inclusion: A case study of teachers of the deaf working in mainstream schools. In P. Farrell & M. Ainscow (Eds.), *Making special education inclusive* (pp. 151–162). Oxon: David Fulton Publishers.

Mayer, C. (2007). What really matters in the early literacy development of deaf children. *Journal of Deaf Studies and Deaf Education*, *12*(4), 411–431.

Mayer, C., & Akamatsu, T. (2003). Bilingualism and literacy. In M. Marschark & P. E. Spencer (Eds.), *The Oxford handbook of deaf studies, language, and education* (pp. 136–150). New York, NY: Oxford University Press.

McIlroy, G., & Storbeck, C. (2011). Development of deaf identity: An ethnographic study. *Journal of Deaf Studies and Deaf Education*, *16*(4), 494–511.

McPherson, B. (2008). Audiology: A developing country context. In B. McPherson & R. Brouillette (Eds.), *Audiology in developing countries* (1st. ed., pp. 5–20). New York, NY: Nova Science Publishers.

Ministry of Education. (2004). *The development of education: National report of Malaysia*. Putrajaya: Ministry of Education.

Ministry of Education. (2013a). *Garis panduan Program Pendidikan Inklusif murid berkeperluan khas* [*Inclusive education programme guideline*]. Putrajaya: Ministry of Education.

Ministry of Education. (2013b). *Malaysia education blueprint 2013–2025*. Putrajaya: Ministry of Education.

Ministry of Education. (2014a). *Malaysia education blueprint annual report 2014*. Putrajaya: Ministry of Education.

Ministry of Education. (2014b). *Malaysia educational statistics*. Putrajaya: Ministry of Education.

Ministry of Health. (2015). *Guidelines for neonatal hearing screening*. Putrajaya: Ministry of Health.

Mitchell, R. E., & Karchmer, M. A. (2004). Chasing the mythical ten percent: Parental hearing status of deaf and hard of hearing students in the United States. *Sign Language Studies*, *4*(2), 138–163.

Moeller, M. P., Carr, G., Seaver, L., Stredler-Brown, A., & Holzinger, D. (2013). Best practices in family-centered early intervention for children who are deaf or hard of hearing: An international consensus statement. *Journal of Deaf Studies and Deaf Education*, *18*(4), 429–445.

National Deaf Children's Society, & National Sensory Impairment Partnership. (2011). Resource provisions for deaf children and young people in mainstream schools. London: National Deaf Children's Society.

Olsson, S., Dag, M., & Kullberg, C. (2017). Deaf and hard-of-hearing adolescents' experiences of inclusion and exclusion in mainstream and special schools in Sweden. *European Journal of Special Needs Education*, 1–15.

Persons with Disabilities Act. (2008). *Akta Orang Kurang Upaya* [*Persons with Disabilities Act*]. Kuala Lumpur: Percetakan National Malaysia Berhad.

Rhoades, E. A., Price, F., & Perigoe, C. B. (2004). The changing American family & ethnically diverse children with hearing loss and multiple needs. *The Volta Review*, *104*(4), 285–305.

Special Education Division. (2013). *Data Pendidikan Khas* [*Special Education data*]. Putrajaya: Ministry of Education.

Tee, C. T. (1990). Methods of teaching deaf children in Singapore and Malaysia. *Teaching and Learning*, *11*(2), 12–20.

UNESCO. (1994). The Salamanca statement and framework for action on special needs education. Paris: UNESCO.

UNICEF Malaysia. (2014). Children with disabilities in Malaysia: Mapping the policies, programmes, interventions and stakeholders. Kuala Lumpur: UNICEF Malaysia.

United Nations. (2006). *Convention on the rights of persons with disabilities* (Vol. 14). UN General Assembly.

United Nations Development Programme. (2016). *Human development report*. Retrieved from http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf

Wapling, L. (2016). *Inclusive education and children with disabilities: Quality education for all in low and middle income countries* (CBM Policy Brief, January 2016).

Wilson, K., Miles, S., & Kaplan, I. (2008). *Family Friendly! Working with deaf children and their communities worldwide*. London: Deaf Child Worldwide.

World Federation of the Deaf. (2016). *WFD position paper on the language rights of deaf children*.

Yasin, M. H. M., Bari, S., & Hassan, N. A. M. (2013). Cue speech and language achievement of hearing-impaired children. *Asian Social Science*, *9*(16), 81–86.

Yasin, M. H. M., Tahar, M. M., Bari, S., & Manaf, F. N. (2017). The sign language learning in deaf student and special education teacher in integration program of hearing problem. *Journal of ICSAR*, *1*(2), 166–174.

Yusoff, A. (2014). Orang pekak sebagai kumpulan orang cacat [Deaf people as a group]. In *Memahami komunikasi orang pekak* [*Understanding communication among deaf people*] (1st ed., pp. 168–188). Kuala Lumpur: Dewan Bahasa dan Pustaka.

Yusoff, Y. M., Umat, C., & Mukari, S. Z.-M. (2017). Profiling the national cochlear implant recipients for prelingual, hearing-impaired children in Malaysia. *Jurnal Sains Kesihatan Malaysia*, *15*(2), 153–162.

About the Authors

Khairul Farhah Khairuddin is a Postgraduate Researcher at the University of Manchester, UK. She was trained as a teacher of the deaf in Malaysia and taught deaf children in secondary schools in Selangor. She holds an MA in Special Education from the University of Newcastle, Australia. Her research focuses on inclusive education for deaf children in Malaysian primary schools.

Susie Miles began her career as a teacher of deaf children in the UK before moving to Swaziland, where she taught in a residential school for deaf children. She later set up Speech and Hearing clinics in Swaziland and became Save the Children's Regional Disability Advisor for Southern Africa. As the founding coordinator of the Enabling Education Network (EENET), she worked closely with, and did consultancies for, a wide range of international agencies, including UNICEF and UNESCO. She is currently a Senior Lecturer in Inclusive Education at the University of Manchester.

Wendy McCracken is a Professor of Deaf Education at the University of Manchester and is the Programme Director of the MSc Deaf Education. She is recognised nationally and internationally, and has received the TS Littler Award for Services to Audiology and Deaf Education 2017—the most prestigious award given by the British Society of Audiology. She is also a recipient of the National Teaching Fellowship for her work in setting high academic and practice standards through maintaining strong links with service providers.