AAC Services for Multilingual Populations: South African Service Provider Perspectives

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Abstract

Background. In South Africa, many persons in need of augmentative and alternative communication (AAC) come from multilingual backgrounds. There is as yet a limited evidence base (locally and internationally) for the provision of AAC services to multilingual populations. The perspectives of service providers can assist in gaining an understanding of current practices and the factors that influence these.

Aims. The study aimed to obtain the perspectives of AAC service providers about practices in providing AAC systems and AAC intervention to clients from multilingual backgrounds.

Methods & Procedures. Fifteen AAC service providers were purposefully chosen to participate in one of three focus groups – two face-to-face and one online focus group. Data from the face-to-face focus groups was transcribed verbatim. Thematic analysis was used to identify themes and subthemes in the data.

Outcomes & Results. Four overarching themes were identified, namely (a) current practices, (b) factors influencing current practices, (c) service provides' orientation towards different language options in AAC intervention, and (d) needs and desired developments regarding AAC technology. This paper reports on the first three themes. Service providers reported their practices to range from a focus on L1 exclusively, L2 exclusively, to a multilingual (sequential or simultaneous) approach. The South African language context, family language preferences and choices, service provider skill and knowledge, as well as AAC technology were identified as factors influencing their practices. Although many viewed access to multiple languages through AAC as positive, they also expressed concerns and reservations about providing multilingual AAC services.

Conclusions & Implications. Although service providers in general saw the need to give clients from multilingual backgrounds access to multiple languages using AAC, this did not always translate into multilingual AAC practices. Both extrinsic factors (e.g. the lack of appropriate AAC devices, software and apps giving access to non-English languages) and intrinsic factors (service providers' language

competency and their beliefs about the cognitive demands of multilingual AAC systems) influenced their practices and choices. Appropriate AAC service delivery to multilingual populations in South Africa would require not only appropriate AAC technology developments, but also research evidence to establish the efficacy of multilingual AAC interventions for clients with a variety of characteristics.

Keywords: augmentative and alternative communication, multilingualism, AAC service providers, AAC technology, evidence base

1. Introduction

The majority of the world's population speaks more than one language (Kohnert, 2013). Although multilingualism[1] has been the rule rather than the exception in many areas of the world for many years, studies on communication development and disorders have been conducted mainly in monolingual populations. However, immigration patterns, including the resurgence of political and economic refugees into areas such as Europe, Canada and the United States of America in recent years (Connor, 2016), have contributed to diversification of language communities. Coupled with a growing recognition of the status of minority as well as indigenous languages, these factors have brought the need for evidence-based intervention methods for multilingual clients with communication disorders to the fore (Jordaan, 2008; Thordardottir, 2010). The notion that multilingualism poses an additional risk to the language and communication development of children with communication disorders has not been supported by any empirical studies to date (Kay-Raining Bird, Genesee, & Verhoeven, 2016; Kohnert, 2013; Kohnert & Medina, 2009), and various authors have advocated for communication intervention that supports the development of all the client's languages (Jordaan, 2008; Kohnert & Medina, 2009). However, empirical evidence for the effectiveness of different communication intervention options for multilingual clients with communication disorders is still extremely limited (Kay-Raining Bird, Genesee, et al., 2016).

Various studies have attempted to increase our understanding of some of the aspects related to providing AAC intervention services to clients from linguistically and culturally diverse backgrounds. Perspectives of caregivers from what may be termed 'linguistic and cultural minority groups' on AAC assessment and intervention have been researched (Huer, Parette, & Saenz, 2001; McCord & Soto, 2004; Pickl, 2011), as have ways in which members of different cultural and language groups perceive and relate to graphic symbols (Basson & Alant, 2005; Bornman, Alant, & Du Preez, 2009; Dada, Huguet, & Bornman, 2013; DeKlerk,

Dada, & Alant, 2014; Haupt & Alant, 2002; Nigam, 2003; Quist, Lloyd, Van Balkom, Welle-Donker Gimbrere, & Vander Beken, 1998; van der Merwe & Alant, 2004). While these studies address valuable aspects that can strengthen appropriate service delivery, the need for studies that identify and verify clinical and educational practices for clients who are multilingual and use AAC remains (Soto & Yu, 2014).

In a recent study, Marinova-Todd et al. (2016) described the practices and opinions of clinical and educational professionals from four countries (Canada, the Netherlands, the United Kingdom and the United States) regarding bilingual supports for children with developmental disabilities (DD), including those using AAC. In contrast to previous studies, most professionals felt that children with developmental disabilities were capable of learning more than one language, although they were slightly less convinced of this capability in children who used AAC and those who had more severe autism or intellectual disabilities (ID) than those with mild autism or ID. They felt that supports for bilingual language development for children with DD were desirable. However, practices in these countries were mostly incongruent with these beliefs, as children with DD typically did not have access to supports to enhance bilingualism. Many children with DD from minority language backgrounds, including those using AAC, were assessed and treated only in the majority language (i.e., their L2[2]). Similar trends have been observed among South African children and adults receiving communication intervention, not least because of a dearth of practitioners who are fluent in African languages (Kathard et al., 2011). The specific practice trends for South African clients who require AAC have not been systematically explored. Arguably the factors influencing service providers' decisions may be even more complex than for clients who do not require AAC. Apart from beliefs and attitudes towards multilingualism amongst service providers and families (which, at times are incongruent with evidence about multilingual language development; cf., for example, Drysdale, van der Meer,

& Kagohara, 2015; Yu, 2013), as well as socio-linguistic and political factors, such as language status and educational policies, the availability of appropriate AAC systems and devices may be another factor influencing practices. In order to provide some background to this study, the South African socio-linguistic and social-political context will be briefly described, followed by a brief description of considerations for multilingual AAC systems.

1.1 The South African Context

With 11 official languages, South Africa is a linguistically and culturally diverse country. Two of the official languages are linguistically classified as Western European languages (English and Afrikaans) and nine are African languages (four from the Nguni group, three from the Sotho group, and two from other groupings). The South African Constitution supports multilingualism and the state is constitutionally obligated to develop all official languages, especially the African languages that historically experienced reduced status (The Constitution of the Republic of South Africa, Act 108 of 1996, 1996, Section 6[1]). However, little has been done to translate this obligation into practice, attributed to factors such as a lack of political will, the hegemonic position of English, and continued negative attitudes towards African languages (Kathard et al., 2011). English, despite being the L1 of only about 9.6% of the population (Statistics South Africa, 2012), continues to be the dominant language in South Africa (Kathard et al., 2011; Khokhlova, 2015; Webb, Lafon, & Pare, 2010). Although the official policy on language in education offers schools the option to use any official South African language as language of instruction (LoI) throughout the 12 years for basic education (Department of Education, 1997), most schools opt to switch to English at the beginning of the 4th Grade. Therefore the majority of learners are educated in English, despite the fact that this is their L2 (Department of Basic Education, 2011). Under the Apartheid regime (prior to 1994), the education system was strictly separated according to racial lines, with severe underresourcing of schools historically serving children from African

language backgrounds. Schools previously catering for white South Africans only (typically with English or Afrikaans as LoI) still benefit from historical advantage, and parents are typically eager to enrol their children at these better-resourced schools, even though their home language may be neither Afrikaans nor English (De Klerk, 2002). English is regarded as giving access to broader educational and employment opportunities, and some parents are actively choosing to add it as a language spoken in their home, or even to revert to English only (de Kadt, 2005). Various authors have raised grave concerns about these practices and have partially attributed South Africa's poor scholastic outcomes in the basic education sphere to these unsupported transitions to English as the LoI (Heugh, 2002; Kathard et al., 2011; Webb, 1999).

Code switching, defined as using different languages within a single conversation (Kohnert, 2013), is a typical phenomenon in South African conversations and is promoted by cross-linguistic contact in urban areas specifically. Speakers code switch to enhance mutual comprehensibility and also to show respect (de Kadt, 2005; Slabbert & Finlayson, 2000). Urban varieties of African languages can differ markedly from the so-called 'standard' or 'deep rural' versions, and observations have been made about language shift and language loss (de Kadt, 2005).

This linguistic environment creates an interesting setting for communication interventions. In addition, the majority of speech-language therapists in South African do not speak an African language (Kathard et al., 2011). While translation and interpretation services are used in intervention at times, these options are not without complications and are also not always available (Kathard & Pillay, 2013; Kathard et al., 2011). As a result, services are mostly offered in English, and, due to previous racial and current economic inequalities, a large part of the population is still underserved - especially African language speakers.

1.2 Considerations for Multilingual AAC Interventions

In their forum paper, Soto and Yu (2014) discuss considerations for service provision for bilingual children in need of AAC. Taking a sociocultural perspective, they highlight assessment and intervention issues as well as AAC system design aspects. The need for multimethod, authentic language assessments; collaborative goal setting; and a family-centred approach in intervention were highlighted. System design considerations included the necessity to take the form, structure, and typical developmental sequence of the spoken language into consideration; to give access to code switching; and to make use of culturally and linguistically appropriate representations (symbols) on AAC systems.

AAC systems and strategies may include aided (e.g., graphic-symbol or orthography-based electronic and nonelectronic options such as speech generating devices [SGDs] and communication boards) and unaided options (e.g., gestures and manual signs). The degree to which these options are overtly linked to a spoken language may vary as a function of the system/strategy and the client's skills and needs. Clients with very limited understanding of spoken language may use AAC (e.g., manual sign or graphic symbols) as an alternative language for both comprehension and expression, quite separate to any spoken language (Smith, 2006; Von Tetzchner & Grove, 2003). Clients who understand the language(s) spoken in their communities would arguably benefit from AAC systems that are clearly aligned to these languages. Considerations may include the form of the AAC symbols. For literate clients making use of orthographic symbols the link between the written and spoken form of the language is typically clear. Multilingual clients would merely need access to the relevant orthographic symbols for the different languages in which they would want to communicate. If access to synthetic speech generation is also desired, speech generation engines in the relevant spoken languages would need to be available. The development of such speech engines is a technically challenging task that has been accomplished for the

global majority languages but is still lagging behind for many minority languages (Calteaux et al., 2013; Louw, 2008; Titmus et al., 2016)

Graphic symbol systems often include iconic and therefore culturally and contextually specific symbols (e.g., the Picture Communication Symbol for 'taxi' shows the yellow cab typical of the United States, whereas a South African taxi is typically a minivan). Systems that include more abstract symbols and make an attempt at formalising a simplistic type of grammar typically (and perhaps inevitably) take their lead from a specific spoken language. Blissymbolics, for example, have been described as parasitic on the English language (Besio & Chinato, 1996). Such overt links to specific spoken languages may complicate the way in which AAC symbols map onto more than one spoken language.

Graphic symbol-based systems require additional design decisions including vocabulary selection and layout. Research evidence to guide practitioners' design decisions is still extremely limited (Thistle & Wilkinson, 2015), but linguistic typology of the client's spoken receptive language should be taken into consideration, especially if access to more complex expressive grammar is desired. If the client's receptive spoken languages differ considerably in linguistic typology, a simple translation of the graphic symbol based system into two (or more) spoken languages will typically not suffice, and different vocabularies, different layout options, and different methods for representing each of the languages may be needed (Baker & Chang, 2006; Yong, 2006). At the same time, such a multifaceted system may increase the learning demands – both for the person learning to use the system as well as their partners. Learning to use an aided system that gives access to one language has already been shown to pose significant demands on cognition and particularly memory (Light & Lindsay, 1991; Thistle & Wilkinson, 2013).

1.3 Study Aims

Given the limited evidence to guide AAC services and AAC system design for clients from multilingual backgrounds and the increasing number of clients in need of such services, the purpose of this study was twofold: (a) to determine how South African practitioners currently negotiate AAC service provision to clients from multilingual backgrounds, and (b) to describe to what extent the possibilities and limitations of available AAC systems influence their practices.

2. Method

The study was approved by the Ethics Committee of the Faculty of Humanities, University of Pretoria, and the Council for Scientific and Industrial Research Ethics Committee. Three focus groups were conducted (two face-to-face and one online) with a total of 15 AAC service providers across South Africa. Since little is known about their current practices and beliefs regarding AAC intervention with multilingual clients, a focus group format was selected in order to qualitatively explore this phenomenon in more depth than a quantitative approach would have allowed. Also, it was hypothesised that service provision to this population is a complex issue, with diverse opinions and motivations underlying various approaches. Since a focus group allows for group interactions among participants (unlike group interviews where interactions are primarily between the researcher and the participants), it was anticipated that this method would allow them to not only report on their current practices but also to reflect on them, and on their concerns, doubts, and underlying beliefs and orientations (Kitzinger, 1994; Liamputtong, 2011). It may not always be easy for practitioners to critically reflect on their own practices or to admit that they are uncertain or even unconvinced by some of the practices they follow. By being surrounded by others who had also experienced the complexities and constraints in practice, it was hoped that a safe space would be created to openly discuss these (Liamputtong, 2011; Williams & Ayres, 2007).

2.1 Participants

Service providers were purposively selected from (a) a list of alumni of a Master's programme in AAC offered by the Centre for AAC, University of Pretoria, and (b) lists of service providers who had previously attended AAC workshops and trainings at the Centre for AAC. These service providers were chosen as they were registered with the Health Professional Council of South Africa and were, at the time, offering clinical AAC intervention services in a variety of settings. Although an attempt was made to include service providers from various linguistic backgrounds, the predisposition towards service providers from English and Afrikaans backgrounds did reflect in the sample. A personal email was sent to 23 service providers, inviting them to participate in the study. Service providers living within reasonable traveling distance from the University of Pretoria (n = 15) were invited to take part in a face-to-face focus group. Another eight service providers who lived in other parts of the country were invited to take part in an online focus group. A detailed information letter and consent form were included in the email. The information letter explained the purpose of the study, the rights of the participants, and the risks and benefits of participation. Procedural information was also included, and this differed somewhat depending on whether the participant was invited to participate in the online versus the face-to-face group.

Face-to-face groups allow for the rich verbal and visual interactions that traditionally characterise a focus group, and therefore this format was selected for participants who lived within reasonable traveling distance from the venue where the groups were held. However, in order not to exclude participants living further away, it was decided that an additional online group would be conducted. Although such online groups lack the rich multimodal communication and the social presence typically experienced in face-to-face groups, advantages of online groups include increased anonymity, resulting in increased openness

and disclosure, and reduced pressure to conform (Liamputtong, 2011). The need to formulate responses in written form can also lead to more reflective, well-considered contributions (Liamputtong, 2011).

A total of 15 service providers consented to take part in the study. Nine service providers (eight speech-language pathologists [SLPs] and one occupational therapist [OT]) took part in the two face-to-face focus groups, and six service providers (two SLPs, three OTs and one physiotherapist [PT]) took part in the asynchronous online focus group. A summary of participant demographics is provided in Table 1.

<Insert Table 1 here>

In addition to the information provided in Table 1, it is important to note that all participants reported being multilingual, although two reported having poor proficiency in their second language (Afrikaans). Regarding their caseloads, the average ratio of adults to children in need of AAC on their caseload was 1:3. As indicated in Table 1, 68% of all clients in need of AAC seen by all service providers were receptively multilingual. Per caseload this ranged from 10 – 100% (SD = 35%). The languages understood by these clients included seven of South Africa's official languages (English, isiZulu, Afrikaans, Setswana, Sesotho, isiXhosa, and Sepedi), as well as four other languages spoken in other countries in Africa (Swahili, Arabic, Portuguese, and French).

2.2 Procedures

All service providers completed a biographical background information questionnaire. A script was developed for the moderation of the face-to-face focus groups. The script commenced with a welcoming of all participants, followed by a brief recapturing of the purpose of the focus group as described in the information letter. This was followed by an opportunity for all focus group members (including the researchers) to introduce themselves. Procedural information was also included in the script, such as the expected time frame, the

encouragement to share freely even if opinions differed, and the request to maintain confidentiality on all aspects shared. The open-ended questions and possible follow-up questions around AAC service provision to clients from multilingual backgrounds were also specified in the script.

Two face-to-face focus groups were then arranged at the Centre for AAC, University of Pretoria, at a time convenient for the participants. Each group lasted about 120 minutes, and was audio-recorded. The first author acted as moderator and followed the script in welcoming participants, giving them an opportunity to introduce themselves,s and providing procedural information. She then posed questions, and gave the participants an opportunity to respond and discuss the questions. Participants were asked to provide their input on three themes, namely (a) their experiences regarding AAC service delivery to multilingual clients and their families; (b) their perceptions and opinions about access to additional languages via AAC for multilingual clients who need AAC and (c) their perceptions and opinions about additional communication technology solutions for multilingual clients who need AAC. Follow-up questions were posed as appropriate. The fourth author acted as scribe, capturing every statement made by participants in point form on a laptop. These statements were then projected onto a screen for all participants to see. After a theme had been discussed, the fourth author read all statements captured aloud, and participants had an opportunity to clarify and revise their input, as a form of member checking. The second and third authors listened to the discussions and asked occasional follow-up or clarification questions.

The online asynchronous text-based focus group was hosted on a private discussion board on a secure server of the University of Pretoria. The discussion was open for four days and was scheduled at a time that suited all participants. In preparation, each participant was provided with a unique password as well as detailed instructions via email explaining how to access the discussion board. They also had the opportunity to test their access and familiarise

themselves with the discussion board by responding to a test question within the two weeks preceding the focus group. The information contained in the script for the face-to-face group was then amended where necessary and posted into the first discussion thread. This included the welcoming, a brief restatement of the aim of the focus group as explained in the information letter, introductions of the research team, and an opportunity for each participant to introduce themselves. Procedural information included the aspects mentioned in the script for the face-to-face group, with additional information regarding the expected frequency of posting. Care was taken to change the information contained in the script as little as possible. A discussion thread was then created for each main question. Participants were able to provide input on each question. They were able to read and respond to the input of other participants. They were also able to edit their own contributions and were encouraged to do so throughout the four days as a form of member checking. The first author once again acted as moderator, commenting and posing written follow-up questions.

2.3 Data Analysis

A research assistant with experience in focus group transcription transcribed each of the recorded focus groups verbatim. The first author then listened to the complete recordings and checked the transcription for accuracy. Text from the transcriptions and from the text-based focus groups was then entered into a spread sheet. The first author coded the text by means of an inductive descriptive coding process in the first cycle of coding (Saldaña, 2013). Text was also divided into segments during the initial coding process so that each segment of text was assigned its own code. The first author developed a list of codes and refined and grouped these into provisional themes and subthemes. She also developed provisional definitions for the themes. Both the first and second author then coded the data from the transcripts together in a second cycle of coding, using the provisional coding scheme as a

guideline. During this process the coding scheme was amended and refined by consensus between the first and second author, and the division of text into segments was finalised.

3. Results

The four overarching themes were closely related to the three themes that service providers were asked to discuss, namely, (a) current practices; (b) influences on current practices, (c) service providers' orientation towards access to additional languages through AAC, and (d) technology needs and solutions. A fifth theme related to general factors (not limited only to multilingual clients) in AAC service delivery in the South African context. Since this theme was not related directly to the question, it was omitted from the analysis. Also, in order to focus this paper, we report here on the first three themes from the analysis. In order to provide readers with an overview, the themes and subthemes as well as examples of codes assigned are summarised in Table 2.

<Insert Table 2 about here>

3.1 Current Practices

All participants across the three focus groups discussed this theme. Four trends could be established in participants' practices, namely (a) providing AAC services in L1 only, (b) providing AAC services in L2 (English) only, (c) providing AAC services in L1 initially and then transitioning to L2, and (d) providing a multilingual or 'cross-lingual' AAC system. Five participants reported only using one language (English) almost exclusively in AAC service provision across all clients, regardless of whether this was the client's L1 or L2. This approach was noted especially by four service providers who worked in schools with English as the LoI, and also by one private practitioner who described her client base as 'middle class', with the implication that English was a viable option for these clients and their families. This practitioner also reported that her own proficiency in any language apart from English was not very good. All the other participants reported using different languages and

also combinations of languages in AAC service provision.

A focus on L1 (typically not English) in intervention was noted by service providers who were proficient in the L1. This approach was typically used for clients who had limited language proficiency and limited exposure to a second language environment (e.g., young children who were primarily at home) or for adults with literacy skills in L1 who chose a text-based system without speech synthesis.

A focus on L2 only (typically English) was also reported by participants. This was reported particularly by school-based service providers (with the LoI being English), but also by service providers who felt that they needed to prepare their paediatric clients to be able to enter schools where English was the LoI. AAC systems in L2 (English) only were also provided to literate adults who needed text-based systems with speech synthesis. Although some clients from Afrikaans-speaking backgrounds used a low quality Afrikaans speech synthesizer[3], clients from other language backgrounds did not have the option of a speech synthesizer in their L1. Many of these service providers acknowledged the shortcomings of this approach, using labels such as ‘a compromise,’ ‘difficult,’ and ‘unfair,’ and acknowledged that it had negative consequences on system use within home and community settings.

One service provider reported that a transition from L1 to L2 sometimes became necessary to allow the client access to a more generative system.

> With my paediatric clients I often see that parents try to find a solution in their L1, which they manage to … up to a point...mostly using apps on iPad/tablet where voice recordings can be used. These apps are often used well where the child uses a "sentence / concept-per-cell", but generally not sufficient beyond this. As soon as the child can progress to more complex methods, English is often the only option available where voice feedback [synthetic speech] is required. (P15)

Another service provider reported a gradual phasing in of English into an isiZulu nonelectronic symbol-based AAC system, occasioned by the transition of the child using the

system into an English day care centre. However, on her SGD, English and Zulu grids were kept separate.

> …I literally put both English and Zulu gloss on the same symbols [on the low tech AAC system], keeping some Zulu expressions on the increasingly English page. She now uses English and Zulu separately in high tech… (P 14)

Various service providers attempted to provide multilingual systems. These included communication boards with the gloss in two languages or SGDs with recorded speech in L1 and synthetic speech in L2 (English). Gestures, signs from sign language, photographs, and graphic symbols were seen by some as being easily linked to more than one spoken language, or to 'cut across' languages.

> …pictures are an enabler because they're a language that can be understood across languages… (P9)

> I really am a fan of gestures. And sign language and so on… and that is across languages. (P4)

In some instances, these AAC systems assisted in bridging the language gap between service providers and clients and/or family.

> So, … 'cause, my proficiency of the language [client's L1] isn't great so I keep in the English version [English gloss in addition to gloss in L1]. So that when I am with the patient I know what I'm talking about. (P1)

Providing systems in languages other than English often entailed additional preparation and programming from service providers or parents, such as translating pre-programmed vocabulary, adding core words in L1, and programming word lists in L1 into prediction dictionaries. Participants commented that this was time consuming, especially in comparison to easily available English systems.

> So definitely, with our voice output systems that's already pre-set…that's only available basically in English… it's just much easier for the parents to go online and get the device. And they can start using it immediately. Whereas with the other languages it's, uhm, quite time consuming to make your own things. (P7)

When SGDs were used for languages other than English, clients typically used recorded speech only, while some used a free low quality Afrikaans speech synthesizer. Both these strategies were also reported to have their drawbacks, since recordings done by the therapist herself were seen as inappropriate to the client's gender, age, and/or culture. Alternatively, a designated person needed to always be available to make recordings when new vocabulary was added. The free Afrikaans synthesised voice was described as unintelligible.

Some service providers not proficient in the client's L1 reported attempting to at least incorporate it into intervention at times, translating AAC systems using online dictionaries or asking family members or therapy assistants proficient in the language to do so. However, they also noted limitations of this process, including inappropriate vocabulary and the fact that direct translation does not take the target language's linguistic typology into consideration.

> And then I- what I find is- because I can't speak it I might then Google, a couple of words. But I find that, if I, maybe I'll put bathroom instead of toilet. Or wash- or washroom. And they- their personal preference would have been to say "I want to go to the loo." Uhm and I think that if I don't have- if I can't get the lingo or jargon that they are used to using in their personal circumstances, they wouldn't want to say washroom because it sounds foreign to who their identity is. (P3)

> Then, uhm, something else that I've picked up, like with the Afrikaans children if I'm using a pre-made [translated] set… The word order is different to English. So that's something that's a challenge. (P9)

> I strongly believe that translation (from English) of interfaces will not be helpful for symbol-based Zulu systems. The structure of the language is too different, as well as the way in which things are expressed. Translation, while it may give access to certain content in the words of the new language, I am not convinced that this is a beneficial or advantageous way to do it. (P14)

Another strategy that service providers relied on when their own proficiency in the client's

L1 was limited was working primarily with the client's main communication partners. Family members not only acted as translators and interpreters but at times also took main responsibility for modelling the AAC system.

> And then we also, uhm, train the communication partner to do aided language stimulation in the home language. So then … they're the facilitator more than us. (P1)

3.2 Influences on Current Practices

All participants across the three focus groups mentioned this theme. Participants spoke about four main factors influencing their current practices. These were (a) the South African language context, (b) their own skills and knowledge, (c) language choices made by the clients and/or their families, and (d) the availability of appropriate AAC systems and technology.

3.2.1 The South African language context. Various participants mentioned the pervasiveness of English in the South African context – this was seen as positive by most since it enabled clients to reap benefits from an AAC system in English.

> …English has become so mainstream. … So uhm, almost any child is exposed to English somewhere. They watch TV. They watch- everything English. So we- we do have that on our side. … They're not participating in the world of silence because, even though their home language is something else. they're almost all exposed to English. (P8)

However, some cautioned that this prevalence was regional, and they took this into consideration when making language choices for AAC systems.

> But then it's also where you work, I mean, in Jo'burg [Johannesburg] maybe you know the- the majority speaks English because it's uh, quite a business oriented city. And in Pretoria there is more Afrikaans, you hear a lot of Afrikaans and a lot of Tswana. So it's where you are at and the- the prevalence of languages in the area. (P2)

Some described the multilingual nature of the South African context. Immigration further diversified the linguistic profile of their clients.

> We're starting to see a lot of, uhm, French speaking, from the Congo, coming from West Africa for rehab in South Africa cause there's no access [to rehabilitation services] in central- in West Africa. So lots of French, Portuguese, speaking people. (P3)

The multilingual nature of the context also promotes code switching, and participants highlighted this phenomenon as typical in many everyday conversations. They indicated that AAC systems and AAC intervention should promote the same easy access to more than one language.

> We, being South African - no matter what your first language is, you've got to understand how to say words in other languages. Because that's what you're immersed in. (P1)

However, none reported designing a system that could easily code switch.

Many of the service providers working with children in need of AAC mentioned that the LoI was a significant factor in directing the language choices for their clients. This often meant concentrating on the LoI rather than the L1 in AAC intervention.

> So if I see a 2-year-old child with CP that is Sotho speaking, I would advise the parents to go with English. Not because I don't feel that Sotho is an important language, but I know he's not gonna get schooling in Sotho unless they decide to home school him. Uhm, so that I can get the language as functional and as well developed as possible, so that he can learn literacy in that language. So if we had schools in all the languages it would be a totally different story. (P7)

3.2.2 Service providers' skills and knowledge. Many service providers saw their own lack of proficiency in their clients' L1 as a major hindrance in providing meaningful AAC intervention in the L1.

> Obviously the biggest issue is not knowing the language yourself. So you can't provide an AAC-meaningful AAC… in their own language. So, and one's biggest hindrance is-is your own adequacy, in that area. (P4)

A lack of linguistic proficiency was exacerbated by lack of cultural proficiency.

> …it's not really only a language barrier but also a cultural barrier in terms of, mm, how you put things… Uhm, like, I would prioritise things in a certain way [referring to vocabulary selection and

> organization] because of my culture and what I see as important or, what I see as important in conversations. But they may not necessarily be the same. (P2)

A lack of evidence for AAC intervention in other languages was also mentioned.

> In my experience I have had many challenges in terms of evidence base for practice, how to design communication systems as a fundamental challenge then also how to structure lessons with so many examples and pre-made activities being based in American culture and language. (P14)

3.2.3 Language choices made by clients and families. In many cases service providers were cognizant and respectful of the language choices and preferences of clients and their families. They reported that many clients and families wanted access to their L1 through AAC, in some cases specifically to communicate with family members who did not understand another language, or to preserve congruence with the language spoken in the context.

> No matter where you are or what you do, it is very important for parents that the children are able to communicate in their mother tongue. Their home language. (P7)

> But his [adult using AAC]- one of his primary goals was to be able to speak to his little child. In the home language. At home. (P1)

> Yesterday I saw a child; his- his parents are highly educated… They speak Afrikaans in the home. So, yes they will be able to- to speak … English, but his [client in need of AAC] school is Afrikaans, his family is Afrikaans. That's, you know, that's his best language. So they want Afrikaans and they do not want an English system. (P2)

At the same time, clients and families sometimes chose English – either as a desired option or as the only forced alternative due to a lack of synthesised voices in other languages.

> Interestingly, I recently assessed a young university student (post TBI), and although she is Xhosa-speaking, she indicated that she would prefer to use an English voice, even if Xhosa would be available. (...) The young student I was referring to studied in English, so I assumed that was the reason. (P15)

> In actual fact most of the- the caregivers ask for English. (P5)

> One of my adults who is Afrikaans, is using an English synthesised voice and the first sentence he asked me to put on his communication device was “I am sorry, but this THING cannot speak Afrikaans." (P11)

Families were also reported to have uncertainties about language choices at times, or to perceive that they have to make a choice of only one language for the system. Various factors may influence such a choice.

> The mother also asked me “Should I also go for Afrikaans or should I go for English,” because she says, you know, she realised the world around them, it’s- it’s English. You know when they go to the shops and so forth. When they are in the community. (P5)

Although family involvement was evident in many comments, some practitioners reported limited contact with families, limited family input into decisions about AAC, and limited or no use of the AAC system in the home context. Although many factors contributed to this situation (e.g., limited contact with parents of children in residential school settings), they acknowledged that AAC systems in the L2 would be less useful in the home environment in many cases.

> Because we’re pushing getting AAC going… It’s going to help you communicate. Then we’re giving [the AAC system to] them in a language that’s not helping them communicate at home. So why would you try and do this. It’s not meeting [the communication need] what we’re trying to say it’s meeting. (P9)

3.2.4 AAC technology. Lack of AAC software and applications with pre-programmed vocabulary and synthetic voices in South African languages other than English was seen as a major influence on current AAC practice.

> I work obviously a lot with English and Afrikaans. The difference that I see when I have a English child that needs a device, I tell the parent, this is available apps, go and have a look... They just download it. … And they start using it. If it’s Afrikaans, it’s like “That’s a good one to use, how can we get it into Afrikaans, is there a voice?” There we can’t. (P7)

> Then, of course, there is the massive barrier posed by the fact that, if not in English, voice output AAC is restricted to recorded voice. (P14)

Furthermore, the content and graphic symbols of many applications were also seen as culturally inappropriate.

> …the pictures that … are used on them [AAC systems], is not necessarily, you know, culturally appropriate for us. (P2)

3.3 Orientation Towards Giving Access to Multiple Languages Through AAC

A total of 14 participants across the three focus groups mentioned this theme. Many service providers felt that access to two languages via AAC would be desirable for many of their clients, especially for those who were exposed to contexts where different languages were used and for those who were receptively multilingual.

> I believe that we should be able to give them everything that a neuro-typical learner would be expected to do. They should be able to switch between languages and learn just as everyone else does. (P 11)

However, some felt that certain clients had less need of a multilingual system due to the contexts they moved in.

> In my opinion, in my situation, if a child is not going to progress with a mainstream curriculum, there would be little need for English and isiXhosa. The home language alone would be sufficient. (P12)

Service providers mentioned various benefits of access to multiple languages via AAC, including cognitive processing benefits and social inclusion.

> …multilingualism has been proven to have cognitive benefits. A person who has had exposure and communicates in more than one language has cognitive advantages, because you have more than one way to solve a problem, your brain is used to switching, looking at things from different angles, so, when I think of my child at the school, whose facilitator speaks to him in Sotho, receptively he has that advantage. But he never gets the opportu- opportunity to practice speaking back to her in Sotho. He can only speak back to her in English. So if we give him that opportunity to play with expressive language as well, then that's really awesome. (P9)

> …a benefit [of a multilingual system] would be social integration. Because as South Africans we are multilingual. (P9)

> Because most of the time, I mean, if I can think of the school setting, the child is in the school but they- half of the day the child is at home... within the community. So, you want both languages. (P8)

Many mentioned that they saw benefits of providing access to the L1 through AAC – in principle and especially for those clients currently using an AAC system in L2. These included social integration, affirming the client's identity, and benefits for language learning.

> In my experience with MND patients it is messages related to social closeness that are amongst the most used in their AAC devices. As [P11] mentioned, it is very difficult to maintain this social closeness if you are unable to speak it in the language that you share with your loved ones. (P10)

> I think that learning to use AAC is like learning a new language on its own...especially for our pre-literate users. Having access to AAC in one's first language should definitely make the process easier. (P15)

Benefits of adding English to an L1 system were also mentioned – this would enhance access to a wider range of partners and contexts.

> So it- it- on a one hand we- we acknowledge the importance of giving the children the opportunity to be able to communicate in their mother tongue. But we also have to acknowledge the fact that our children need to be able to communicate in English. Because otherwise you're not gonna order McDonald's, in Afrikaans. They're gonna st- look at you and s- wonder what you're talking about. (P 7).

At the same time, service providers voiced their reservations and uncertainties about providing AAC systems in multiple languages. Many of their concerns were related to the learning demands of such systems juxtaposed with their clients' skills. They seemed to suggest that it might be too difficult for some of their clients to learn multilingual AAC systems.

> Uhm, and- and it's not a problem if the child is high cognitive functioning and has the language receptively. But our little ones that don't have it, uhm, it's- it's- they don't even learn to understand one language....To say two languages? (P7)

> I think it really depends on the person who uses AAC and their environment. For some AAC clients it is very difficult to just master communication in one language and an additional language would not be necessary. (P9)

It has to be noted that current research does not support the notion that multilingualism is too difficult to attain for children with speech-language impairments and/or developmental disabilities (Kay-Raining Bird, Genesee, et al., 2016; Peña, 2016). Participants were divided as to whether a mono- or multilingual approach should be the starting point in AAC intervention. Some felt that, where clients moved in multilingual contexts, this should be reflected in their AAC system from the start, while others felt that a second language should only be added once the client 'showed potential' to be able to cope with a multilingual system.

> Let's give them [clients in need of AAC] the same exposure with the same expectations! Especially so if we are starting early, then if someone struggles, then we re-evaluate, not before. (P14)

> ….it should firstly be a priority to communicate in a child's home language… Thereafter if the child's potential allows for a second language it would be wonderful if a second language is available. (P10)

4. Discussion

The analysis revealed five overarching themes in the data, of which three are presented in this paper, namely (a) current practices, (b) influences on current practices, and (c) service providers' orientation towards access to additional languages through AAC. Regarding the first theme, participants reported using a variety of approaches in providing AAC services to multilingual clients, including mono- and multilingual approaches. Regarding the second theme, the possibilities and limitations of specifically aided AAC

systems and AAC technology were important influences on their practices, as were other factors, namely, the South African language context, their own skills and knowledge, and client and family choices. Regarding the third theme, their own orientations towards multilingual AAC service delivery reflected some ambiguity – on the one hand, most reported that they believed there were benefits, but, at the same time, some felt uncertain as to whether clients would 'cope with the demands' of multilingual systems.

4.1 Beliefs versus Practice

Participants generally agreed that there were benefits when the AAC system gave access to all the languages that the client was exposed to. This is congruent with the literature proposing the development and support of all languages of a multilingual person with communication disabilities as current best practice (Kay-Raining Bird, Trudeau, & Sutton, 2016; Kohnert, 2010; Soto & Yu, 2014). These perceptions also reflect a sociocultural approach to AAC intervention, acknowledging that language learning is as much a linguistic as a sociocultural process and that access to the languages spoken in the community enables social integration and participation, which, in turn, promote language learning (Soto & Yu, 2014). Some of their practices were congruent with these beliefs, as they attempted to provide systems in multiple languages. The latter often meant spending much additional time and effort in translating vocabulary and adding voice recordings to SGDs.

At the same time, various factors led them to provide mono- rather than multilingual AAC intervention in many instances. These included factors related to themselves and their beliefs, the family, the environment, and the availability of AAC systems in languages other than English. Many expressed a belief that bilingual systems would pose learning demands that might be too high for many of their clients, especially those with cognitive and language (rather than only speech) disabilities. A belief by professionals and families that multilingualism in general is difficult to attain or an additional risk for language problems for

persons who have speech-language impairments and/or a developmental disability has been reported persistently in the literature over the years (De Valenzuela et al., 2016; Drysdale et al., 2015; Gutierrez-Clellen, 1999; Levey & Sola, 2013; Yu, 2013), although empirical evidence does not support this belief (Kay-Raining Bird, Genesee, et al., 2016; Peña, 2016). Similarly, the belief that it would be easier for clients to start off with a monolingual system rather than a multilingual system may seem somewhat contrary to the findings that simultaneous rather than sequential bilingualism favoured language development in both languages in bilingual children with developmental disorders (Kay-Raining Bird, Genesee, et al., 2016).

It has to be acknowledged that caution needs to be exercised in applying evidence from children with developmental disorders to clients using AAC – learning to speak more than one language may not pose the same demands as learning to use an AAC system that allows for expression in more than one language. As yet, comparative evidence for communication outcomes using mono- versus multilingual systems is lacking. At the same time, AAC systems and intervention strategies can range from very basic techniques - such as providing a few object symbols to represent a few choices - to complex systems that require extensive iconic encoding or the memorization of hundreds of picture symbols and their location on multiple page sets or even full literacy skills. It has always been a premise that the system or technique chosen for the client should complement his/her capabilities and needs (Beukelman & Mirenda, 2013), and, theoretically, this should be possible even if and when multilingual systems are provided.

Interestingly, service providers did not talk about challenges specifically in the assessment of multilingual clients, even though the lack of culturally and linguistically appropriate speech and language assessment tools for the South African context has been highlighted in the literature (Pascoe & Norman, 2011; Romski et al., 2018). Since these

clinicians were all experienced in AAC service provision, it is likely that they did not rely extensively on standardised tests in order to assess mono- or multilingual clients in need of AAC (Dietz, Quach, Lund, & McKelvey, 2012). They may have followed a much more integrated approach, where assessment and intervention are both continuous and complimentary processes (King, Binger, & Kent-Walsh, 2015). Furthermore, they may have relied on informal and/or authentic assessment approaches – arguably approaches they may also have used with other clients who did not need AAC (Pascoe et al., 2010). Since they did express concerns and uncertainties about the feature matching of multilingual systems to clients' abilities, however, a more detailed understanding of how they come to evaluate and estimate the client's skills and abilities would be needed.

Provision of AAC systems and AAC intervention in L1 only seemed to be viewed more positively than the provision of the system in L2 only. Providing L1 systems and intervention was easier when therapists were fluent in L1, although methods such as electronic translation, interpretation services, and supporting family members to take on the role as main interveners were strategies to circumvent a lack of L1 proficiency in the service provider. In the population of children with developmental disabilities, there is some limited evidence that L1 interventions may facilitate certain skills in L2 (Thordardottir, 2010), although L2 interventions seem not to benefit L1 development (Kay-Raining Bird, Genesee, et al., 2016). L1 (minority language) only interventions seem to be rare according to international literature (Kay-Raining Bird, Genesee, et al., 2016), and many service providers seem to feel inadequate to provide them (Guiberson & Atkins, 2012). The fact that some of the service providers in this group attempted to provide them in spite of language barriers may be a function of their diverse caseloads and a realization that, although English is the lingua franca in South Africa, English only interventions would not help many of their clients.

Although various service providers acknowledged the limitations of providing AAC intervention and systems in L2 only, this route was still followed. When clients were children, service providers often saw themselves mandated to support the LoI (typically English), especially when employed at a school. This is congruent with findings by Jordaan (2008), who reported that, internationally, the LoI was the factor most often influencing the choice of language used in intervention with bilingual children in need of speech and language services. However, as noted by Jordaan and other authors (Kay-Raining Bird, Genesee, et al., 2016; Peña, 2016), these practices are incongruent with findings that supporting L1 and/or both languages seem to lead to better language outcomes.

4.2 Influencing Factors

Service providers acknowledged that their own lack of proficiency in clients' L1 was a major hindrance in providing appropriate AAC services – an observation that has been made in other studies involving South African rehabilitation service providers (Khan, Knight, & Esterhuizen, 2009; Penn, Mupawose, & Stein, 2009). The lack of transformation in the linguistic and cultural profile of healthcare professions and particularly the speech-language therapy profession remains a major hindrance in providing equitable and appropriate interventions for the majority of the South African population, as most service providers continue to come from English and Afrikaans-speaking backgrounds(Kathard & Pillay, 2013; Pillay & Kathard, 2015). This poses a significant and fundamental barrier for appropriate multilingual AAC service provision. Although strategies such as working with translators and interpreters were mentioned by participants, these strategies themselves have limitations and imply cost in labour and time. In their South African response to the World Report on Disability, Kathard and Pillay (2013) eloquently argue for increased political consciousness as a basis for transformation in the profession, noting that it allows critical interrogation of factors at macro-, meso- and microlevel. These factors include health care systems and

policies, the biases and assumptions underlying professional training and knowledge, as well as the way in which service providers construe their relationships with their clients. Such critical interrogation should then lead to reconceptualise not only recruitment and training of health professionals but also the service delivery models and paradigms underlying professional identities in order to provide a more democratised and equitable service.

Service providers acknowledged the influence of client and family preferences and choices regarding language(s) used for AAC intervention. In some cases, these preferences and choices seemed to drive decisions. Jordaan (2008) also found that, internationally, so-called 'parental insistence' was a deciding factor in language choice for intervention with bilingual children. However, similar to findings by McCord and Soto (2004), service providers also acknowledged that some families had limited input into language choice and that incongruence between the language of the system and the language used in the home seemed to influence system use in home contexts negatively.

Macrosystemic influences such as national policies about LoI and the prevalence and hegemonic position of English in South Africa (Heugh, 2002; Khokhlova, 2015) could also be seen to directly or indirectly influence the decisions of both service providers and, reportedly, clients and families. English is seen by many as the language that will enhance opportunities for education and employment and allow interaction with a broader audience in the South African context (de Kadt, 2005; Khokhlova, 2015). This perception may lead to the decision to use an English only system, but may also serve as a motivation for adding English to an AAC system provided in the L1.

The lack of readily available AAC systems in South African languages other than English was an important factor influencing language choice in interventions. Designing and programming AAC systems is time consuming and requires an in-depth knowledge of the content and structure of the language (Andres, 2006; Baker & Chang, 2006; Liu & Sloane,

2006). Service providers may have neither the time nor expertise to do so. Well-designed commercially available systems – especially those making use of graphic symbols – may be based on some research evidence (e.g., core vocabulary studies) and are designed with the input of experts such as linguists and computer analysts (Andres, 2006; Hill, 2006; Liu & Sloane, 2006). Although service providers, clients, and families need to customize such systems, a great deal of programming and designing has been done for them. To expect service providers and families to design multilingual systems without any existing framework seems a tall order, especially in the light of limited research evidence and guidelines for the design of monolingual systems (Thistle & Wilkinson, 2015). In addition, SGDs making use of recorded rather than synthetic voices have limited generative capacity. English systems may therefore be chosen by service providers, clients, and/or families for the sake of their availability, convenience, integrity, and/or for the availability of a synthetic voice, allowing novel utterance generation through strategies such as text-to-speech, iconic encoding, and grammar prediction. The development of AAC systems in other languages is clearly an urgent need. At the time of writing, speech synthesizers in all 11 South African languages (male and/or female adult voices) running on the Windows operating system had been made commercially available, with further developments for additional operating systems underway (Calteaux et al., 2013; Louw, 2008; Titmus et al., 2016).

5. Limitations

There are several limitations to this study that need to be acknowledged. First, the linguistic profiles of participants are not representative of the South African population, with an overrepresentation of persons from English and Afrikaans language backgrounds. This profile is representative of speech-language therapists and AAC service providers in South Africa (cf. (Dada, Murphy, & Tönsing, 2017; Kathard & Pillay, 2013); however, it still complicates and limits service delivery to large proportions of the population – particularly

those from African language backgrounds. Although the data obtained through the focus group may be a commentary on the current status quo in the field, it should be acknowledged that this status quo itself is biased and excludes specific sectors of the population who do not receive services and are therefore not considered in service providers' opinions – particularly clients who are from African language backgrounds.

In addition, the sample consisted of a small number of purposefully selected participants, limiting the generalizability of the findings. Participants were also heterogeneous in terms of their caseloads and work settings, which precluded an in-depth understanding of AAC service delivery to a specific multilingual population within a specific service delivery context. Furthermore, no distinction was made between practices involving children in need of AAC versus adults in need of AAC. Practices and factors influencing these may differ for these populations, as language development is typically a goal of AAC intervention for children, whereas this would often not be the case for adults. Similarly, no distinctions between practices for clients with good versus poor understanding of the spoken languages of their communities were made. Social desirability effects are another limitation of the focus group methodology.

The initial coding scheme was developed only by the first author, although the coding scheme was refined and adjusted by both the first and second author during a process of joint coding of the data. This limits the credibility of the findings, since the first author's way of analysing the data would have guided further interpretation of the data. Involvement of additional persons in the initial development of the coding scheme would have increased the trustworthiness of the data. Conducting focus groups with multilingual families receiving AAC services would also have added their perspectives to more fully understand service provision to this population.

6. Implications for Research and Practice

Findings of the current study should be followed up with a larger scale descriptive study to obtain a more representative picture of AAC service provision to multilingual clients and their families in South Africa. On a microlevel, information specific to individual clients and their families as well as the specific approaches used in intervention could assist in understanding what approaches are currently chosen for which clients and what factors are deemed important in clinical decision-making. In this regard, the voices of other stakeholders also need to be heard. Systematic documentation of the perspectives of persons using AAC and/or their families can clarify their perceptions for the need for access to multiple languages via AAC and the expectations they would have of multilingual systems (e.g., the degree of generativity required in each language, desirability of code switching features, and ease of use); the perceived purpose of such systems; their compatibility with the family and client's culture, beliefs, and languages; the learning demands; and the experience of their implementation. Such data would be invaluable to guide multilingual AAC intervention practices and would also be needed to develop appropriate intervention research.

In an effort to start documenting the effects of multilingual AAC interventions, service providers implementing such practices (such as the ones reported on in the focus group) and the families they serve could be encouraged to systematically report on such cases (including meticulous documentation of client and family variables; AAC intervention approaches including choice of AAC techniques and systems, system design and updates; and a variety of proximal and distal outcome variables). This could assist in starting to create evidence from practice regarding the possible effects of multilingual AAC intervention for specific clients under specific circumstances. Although such case studies fall short of experimental control and are limited in generalizability, they can nevertheless serve to guide more rigorous larger scale investigations. Multiple case studies are also able to capture diverse methods for diverse clients.

Clinically, the results of the current study suggest some strategies that service providers have used to provide AAC intervention in languages other than English and also in multiple languages. Although specific research evidence to guide multilingual AAC intervention and system design is still sorely lacking, practitioners may gain some ideas of options that, in collaboration with families, could be explored with due consideration of existing research in general AAC intervention (e.g. research on system design, cf Thistle & Wilkinson, 2015) and also research that underpins practice guidelines and principles in the field of bilingual education and bilingual language intervention (Soto & Yu, 2014). Practitioners who successfully work with clients and their families in providing multilingual AAC intervention may provide guidance and ideas to others who are less experienced. Such communities of practice may then also direct and contribute to the research agenda that would further evidence-based service delivery to multilingual clients and their families.

On a macrolevel, fundamental questions about equity of AAC service provision need to be investigated. Who is receiving services, and who is not? How are multilingual and multicultural questions addressed in service provider training and in service systems? Although it may seem that service access barriers should be solved first, we would argue that these need to be addressed concurrent with questions about cultural and linguistic appropriateness of services. Unless clients see a service as appropriate and improving their quality of life, motivation to access this service (when available) or advocate for its availability will remain low.

7. Conclusion

From the focus groups, a rich and complex picture of systemically interrelated factors at play in AAC intervention with multilingual clients emerged. Similar to the findings by Kay-Raining Bird, Trudeau, et al. (2016) in their synthesis of studies regarding the access to bilingual leaning opportunities for children with developmental disorders, these factors relate

to the client (e.g., language choice, receptive language proficiencies and cognitive skills), the microsystem (e.g., service provider language proficiency, knowledge, and orientation towards multilingualism; family language choices and preferences; as well as LoI at schools), the exosystem (e.g., language spoken in the community), and the macrosystem (e.g., policies about LoI, and society's general attitudes and views of language status). The lack of appropriate AAC systems and techniques in multiple languages, the lack of research evidence and clinical guidelines for the implementation of such systems, and service providers' skill and time for designing multilingual and/or L1 (non-English) systems are additional factors that are unique to clients in need of AAC. Attempts by some practitioners to provide multilingual AAC intervention and systems are encouraging, as such attempts seem congruent with best practice principles proposed for multilingual children in need of speech-language intervention. However, a more in-depth understanding of these practices as well as their acceptability and efficacy is urgently needed. Systemic barriers and facilitators to appropriate AAC service provision for multilingual clients and their families also require further investigation.

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Footnotes

[1] The term 'multilingualism' is defined according to Grosjean (2013), as "the use of two or more languages…in everyday life" (p. 5). Although Grosjean defines bilingualism and multilingualism in identical terms, the term 'multilingualism' is used in this paper, since many South Africans speak more than two languages.

[2] L1 and L2 refer to the languages learnt first and subsequently respectively by persons who acquire multiple languages sequentially (Kay-Raining Bird, Genesee, et al., 2016).

[3] At the time of the focus group, high quality speech synthesizers in South African languages other than English were not commercially available. However, developments were underway (cf. Calteaux et al., 2013; Louw, 2008; Titmus et al., 2016).

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Table 1

Participant Demographics

Variable	Description		
	M	*SD*	Range
Age	39	11	28-59
Years of AAC experience	8	7	1-25
Caseload of clients in need of AAC per year	17	11	5-100
Percentage of clients in need of AAC who are receptively multilingual	68%	35%	10-100%
	Category	*n*	%
First language	English	6	40%
	Afrikaans	6	40%
	isiZulu	2	13%
	Setswana	1	7%
	German	1	7%
Variable	Description		
	Category	*n*	%
Work setting	Private practice	10	67%
	Public special school	5	33%
	Public hospital	2	13%
	Non-government organization	1	7%
	University-based consultation service	1	7%
Primary profession:	SLP	10	67%
	OT	4	27%
	PT	1	7%
Training in AAC:	Graduate degree	3	20%
	Master's degree	11	73%
	PhD	1	7%
Variable	Description		
	Category	*n*	%
Language(s) in which AAC services were provided	English	15	100%
	Afrikaans	9	60%
	isiZulu	4	40%
	Setswana	2	13%
	Sesotho	2	13%
	Sepedi	1	7%
AAC services provided	AAC assessments	13	87%
	Training clients to use unaided systems/strategies	12	80%
	Training clients to use aided systems/strategies	15	100%
	Making and/or customizing nonelectronic AAC systems	15	100%

Variable	Description		
	Category	*n*	%
AAC services provided (cont)	Customizing and/or programming electronic aided AAC systems	13	87%
	Training communication partners	14	93%

Table 2

Themes, Subthemes and Examples of Codes

Theme and definition	Subthemes	Examples of codes
Current practices: Descriptions of language choices for AAC intervention, the AAC strategies implemented to realise these, as well as critical reflections on both the choices made and strategies used.	L1 only	Strategy: Use of pre-recorded speech to give access to expression in L1
	L2 only	Critical reflection: Limitations of providing AAC intervention only in L2
	Transition	Description: Changing from L1 only to L2 only AAC system
	Multilingual/‘cross-lingual’	Strategy: Providing gloss on communication boards in two languages
Factors influencing current practices: Any factors that service providers mentioned as an influence, reason or justification for the AAC intervention practices they implemented with multilingual clients. These could include micro- and macro-systemic influences	South African language context	Pervasiveness of English in South Africa
	Service provider skills and knowledge	Service provider not fluent in client’s L1
	Language choices made by clients and families	Family desires access to L1
	AAC technology	Limited access to AAC apps/systems in South African languages
Orientation towards giving access to multiple languages through AAC: Service providers’ beliefs about access to multiple languages via AAC, comments on the desirability and benefits of multilingual AAC systems/intervention, as well as comments revealing reservations and uncertainties about such systems/practices	Desirability	Access to multiple languages is needed
	Benefits	Social integration
	Reservations and uncertainties	Multilingual AAC system demands vs. client skill