The assessment of minority language skills in English-Irish speaking bilingual children: a survey of SLT perspectives and current practices

Abstract

Background: An increasing number of children in the UK and Ireland are growing up speaking more than one language. The many advantages of bilingualism are acknowledged however this increased linguistic diversity presents particular challenges for Speech and Language Therapists. The case is often more complex with speakers of minority languages such as Welsh and Irish which are acquired almost exclusively in bilingual contexts. Lack of appropriate standardised assessments for bilinguals is a key issue for Speech and Language Therapists internationally, however little is known about the practices, personal perspectives or wider challenges faced by SLTs in assessing minority language skills. We focus on SLTs working with English-Irish bilinguals across Northern Ireland (NI) and the Republic of Ireland (ROI) where status, use and exposure to Irish differs significantly.

Aims: To investigate the perceptions and practices of Speech and Language Therapists in Northern Ireland and the Republic of Ireland in the assessment of bilingual English-Irish speaking children.

Methods and procedures: A 33-item online survey was distributed to SLTs working with children in community settings in NI and the ROI.

Outcomes and results: 181 SLTs completed the survey. The majority of respondents had bilingual English-Irish speaking children on their caseloads however, less than one-quarter had assessed Irish language skills. Responses

indicate confusion as to whether best practice guidelines applied in this particular context where the majority of speakers have English as their first language and limited domains of exposure to Irish outside of the education system. Resources available to assess Irish language skills were found to be limited. Informal analysis of language samples emerged as the most popular assessment tool. SLTs in the ROI had a significantly higher level of competence in the Irish language than SLTs in NI. This reduced the challenge of assessment. Many SLTs reported scoring assessments standardised on monolingual populations when assessing English language skills in bilingual English-Irish speaking children.

Conclusions and implications: Our findings highlight the challenges faced by SLTs in meeting best practice guidelines in the assessment of speakers of minority languages such as Irish. Further work is needed to ensure clinicians and other professionals have access to information and enhanced training on bilingual language acquisition in minority language contexts and implications for assessment and diagnosis. This study underlines the need for further research on the acquisition of minority languages as well as the development of alternative assessment tools to assist SLTs in meeting the needs of this population.

What this paper adds

What is already known on the subject

Existing research indicates that SLTs face challenges in assessing bilingual clients. Lack of assessment resources is a global issue, particularly with respect to minority languages. Emerging research indicates that SLTs and other professionals are dissatisfied with current resources for assessing Irish speaking bilinguals and are struggling to meet best practice guidelines.

What this paper adds to existing knowledge

The status of the Irish language differs significantly between Northern Ireland and the Republic of Ireland, while English is the dominant language in both areas. This study provides the first exploration of current assessment practices for bilingual English-Irish speaking children as reported by SLTs across both regions. The challenges of assessing bilingual clients in many other countries are mirrored by SLTs in NI and the ROI. The majority of children acquiring Irish are doing so in a specific context, the immersion education setting; this raises uncertainty for SLTs around whether the definition of bilingualism actually applies. Despite clinicians and clients sharing the same majority language, the complexity of minority language assessment remains.

What are the potential or actual clinical implications of this work?

SLTs require specific support and resources to help them meet the assessment needs of bilingual English-Irish speaking children. Ongoing education and training are required for clinicians and other professionals to facilitate understanding of the complexities surrounding bilingual speakers of minority languages and the application of best practice guidelines. A greater understanding of the context in which children are acquiring Irish and the impact this may have on their acquisition of English would further support clinicians in identifying Speech, Language and Communication Needs in this population.

Introduction

Changing demographics in the UK and Ireland over the last decade means that issues around bilingual and cultural diversity are of growing importance. Bilingual individuals are defined as those who acquire communication skills in more than one language. The Royal College of Speech and Language Therapists (RCSLT) (2018) emphasise that an individual should be considered bilingual regardless of proficiency in the languages they speak. Bilingualism is the norm in many parts of the world (RCSLT 2018). Research indicates cognitive, social and even economic advantages of bilingualism (Bialystok 2017). Current evidence indicates that learning more than one language does not cause or contribute to Speech, Language and Communication Needs (SLCN) in children (for example, Uljarevic *et al*. 2016, Lund *et al*. 2017). Due to several features of bilingual language acquisition such as input and exposure to each language, bilingual children often present with language profiles which differ from their monolingual peers (Paradis *et al*. 2017). Consequently, discriminating between differences in the language profile of bilingual children and those related to a language disorder can be complex (Verdon *et al*. 2019) and can put them at risk of misidentification (Li'l *et al*. 2019). This is even more challenging given that SLTs are often not familiar with the languages spoken by the child (DeLamo White and Jin 2011). This situation is further complicated in a context where one of the languages a child is acquiring is a minority or endangered language (O'Toole and Hickey 2013) where the impact of factors such as exposure and experience may be more significant than for majority languages (Grosjean 2010, Paradis *et al*. 2017).

SLTs recognise the benefits of bilingualism however, the assessment and differential diagnosis of bilingual children presents a challenge (Hassan *et al*. 2013, Verdon *et al*. 2019). Current best practice guidance in the UK (RCSLT 2018) and Ireland (the Irish Association of Speech and Language Therapists, IASLT 2017) emphasises that in order to accurately and effectively assess bilingual clients, assessment of language and communication skills in any/all of the languages to which they are exposed is required.

The challenges of assessing bilingual clients are well documented in the literature (Williams and McLeod 2012, Caesar and Kohler 2007, D'Souza *et al*. 2012 among many others). A study by Williams and McLeod (2012) examined Australian Speech and Language Pathologists' practices in relation to children who spoke languages other than English. Findings indicated that for almost half of the multilingual children reported on in their study, assessment was conducted in English only. One of the main reasons recorded by SLTs for not assessing the child's home language (L1) was lack of available resources. Similar findings were noted in a Canadian survey by D'Souza *et al*. (2012) where the largest percentage of respondents with bilingual clients on their caseloads reported lack of availability of appropriate assessment instruments as a barrier to their assessment practice.

Due to a lack of resources and differences in the languages spoken, clinicians often turn to translating language assessments (see D'Souza *et al*. 2012, Van Dulm and Southwood 2013). Translating assessments is not advised as languages vary in terms of both the structure of sentences and elements such as word order (RCSLT 2018). Structures that exist in one language may not exist in another or may not have a direct translation. By relying on translated assessments clinicians may

therefore miss out on assessing specific and important aspects of the child's language. In addition, languages vary in their order of acquisition so a structure may be acquired earlier in one language than the other. These differences make the scoring and interpretation of translated assessments for diagnostic purposes meaningless (Stow and Pert 2015). Van Dulm and Southwood (2013) found that SLTs in South Africa are commonly using translations of English-medium assessments when assessing Afrikaans-speaking children. Similar processes are evident in Wales whereby Welsh-speaking SLTs are reported to be heavily reliant on the use of informally translated English assessments (Chondrogianni and John 2019). In addition, a survey of American SLTs (Caesar and Kohler 2007) reported that formal, standardised English tests were used more frequently than informal assessment procedures when assessing bilingual students. To compare a bilingual child's acquisition of a language to that of a monolingual child is not appropriate as the bilingual child will have had less, and often different exposure to the assessed language. These reported practices are contrary to current UK professional guidance (RCSLT 2018). This appears to be a global issue. A recent international survey of language assessment practices by SLTs and teachers including respondents from UK, USA, Canada and Netherlands indicates that practice often deviated from official recommendations (Marinova-Todd *et al*. 2016). In sum, research to date has highlighted the key challenges faced by SLTs across the world when seeking to meet the assessment needs of linguistically diverse caseloads. The mismatch between the language of SLTs and their clients, the lack of availability of language specific resources, and availability of interpreters are recurrent themes in the literature.

Local Context

Irish is a minority language with increasingly limited numbers of monolingual speakers and is acquired almost exclusively in bilingual contexts, with English as the majority language (for example, Müller *et al*. 2019). The status of Irish differs significantly between Northern Ireland (NI) and the Republic of Ireland (ROI). In the ROI, Irish is the official first language and speakers are protected by the Official Languages Act (2003). In NI, Irish is an officially recognised minority language. English is the dominant language in both areas. In the ROI, census figures from 2016 (CSO 2017) show that 39.8% of respondents reported being 'able to speak' Irish, compared to 41% in 2011, only 1.7% reported speaking it daily. These figures also show a decrease in *Gaeltacht* areas, home to the highest concentration of Irish speakers; 66% of respondents reported speaking the language but only 21% reported speaking Irish outside of education. In contrast, in NI only 11% of respondents in 2011 (Northern Ireland Statistics and Research Agency 2011) reported 'some ability' in Irish.

Significant differences also exist in the contexts in which children are exposed to and use Irish in NI and the ROI. In the ROI all children learn Irish as part of the primary and secondary curriculum and, except for some exemptions, it is a compulsory subject for all students to study until they leave school. This is not the case in NI where many students may have limited or no exposure to Irish through the education system unless enrolled in Irish Medium Education (IME). Growing numbers of children in both NI and the ROI are enrolled in IME where Irish should be the main language of communication. From 2006/07 to 2016 this sector was reported to be the fastest growing sector in the Northern Irish education system

(Comhairle na Gaelscoilaiochta 2019). This reported growth in the IME sector may well be reflected in increasing numbers of SLTs coming into contact with bilingual English-Irish speaking children on their caseloads.

The unique context by which many children acquire Irish and the specific challenges faced by SLTs when assessing minority Irish speakers have been discussed in recent literature (for example, Muckley 2015, O'Toole and Hickey 2017). The majority of the children in IME are L1 English speakers and are exposed to Irish for the first time through the education system (O'Toole and Hickey 2017) either at pre-school from 3 years old or school age level, 4-5 years old. This context raises a discussion around definitions of bilingualism and whether these children meet the definition (see O'Toole *et al*. 2020) however current UK professional guidance (RCSLT, 2018) adopts an inclusive definition which applies to any individual with the knowledge of more than one language. The immersion-education model used in IME (Gaelscoileanna Teo 2019) is common in many parts of the world for example Maori-medium education in New Zealand and French immersion in Canada as well as in Wales and Scotland for Welsh and Scots Gaelic respectively. In IME the target language Irish is used both for curriculum content and as the medium of instruction. It is accepted that there may be variation in relation to this in practice. On commencing IME, children will be listening to Irish, following class routines and building knowledge of the language therefore meeting the broad definition of bilingualism. Since most children attending IME are from English-only homes they may have limited or no exposure to Irish outside of the classroom and conversely limited exposure to the language of the curriculum in English. Similar issues are reported for children acquiring Welsh (see Gathercoole and Thomas 2009). It is important to consider the impact of different contexts on the acquisition of the

minority language (Nic Fhlannchadha and Hickey 2019). The difference in language acquisition that this context creates can either be mistaken for or mask language difficulties, so these children are at risk of misdiagnosis (Dockrell *et al*. 2014, Muckley 2015).

A further challenge for clinicians working with bilingual children is that little is known about the pattern of linguistic development in languages other than English. This is particularly relevant in the case of minority languages such as Irish (Muckley 2015). Lack of information around norms for typical acquisition as well as lack of knowledge of reliable clinical indicators for language disorder in these languages presents a challenge for SLTs in reaching a differential diagnosis of bilingual clients (O'Toole and Hickey 2013). Parallel issues are reported for the assessment of children acquiring Welsh as, despite different stages in the acquisition of Welsh being identified, there is an absence of information regarding the specific age of acquisition of the various morphemes or structures (Chondrogianni and John 2019).

Existing research

O'Toole and Hickey (2013) carried out a qualitative study focusing on the assessment practices of both SLTs and psychologists with respect to diagnosing Specific Language Impairment (SLI) (now known as Developmental Language Disorder) in bilingual Irish speaking children. With reference to current assessment practices, both SLTs and Psychologists were particularly concerned by the lack of normative information available to interpret language samples. They reported that external pressures for standardised testing often meant they resorted to translating English language assessments. Many of the themes which emerged from this study were consistent with international studies outlined previously (Caesar and Kohler

2007, D'Souza *et al*. 2012). In conclusion the authors called for an urgent and official recognition of the testing needs of speakers of endangered languages such as Irish.

We are aware of no other research which has focused exclusively on SLT assessment practices in relation to bilingual English-Irish speaking children. Importantly, given the variation in both status and use of the Irish language in Northern Ireland and the Republic of Ireland, the current study included SLTs from both regions. This allowed us to compare experiences and perceptions in relation to assessment of this caseload. Given the documented increase in children attending Irish Medium Education across NI and the ROI and the requirement to follow recent best practice guidelines (RCSLT and IASLT), it is crucial and timely that we gain a clearer picture of current practices, available resources, and the perspectives of SLTs.

Aims

The main aim of the current study was to examine SLT practices and perceptions in relation to the assessment of bilingual English-Irish speaking children in community settings in Northern Ireland and the Republic of Ireland. In particular, we address the two main research questions below.

1. What are the current practices of SLTs in the speech and language assessment of bilingual English-Irish speaking children in NI and the ROI?

2. What are the experiences and perceptions of SLTs in NI and the ROI with regards to the assessment of bilingual English-Irish speaking children?

Method

To address the aims of the current study and the gaps in existing knowledge, a thirty-three-item online cross-sectional survey was developed. The survey sought to gather the views of SLTs working in community contexts in NI and the ROI regarding their current practices and perceptions of assessment of bilingual English-Irish speaking children.

In NI, approval for the study was granted by the Research and Development offices in each of the five Health and Social Care (HSC) Trusts. UK Health Department Ethical approval was not required as the research was limited to the involvement of staff as participants. In the ROI, approval for the study was granted by the Primary Care Research Committee.

Participants

The survey was available to community-based practising Paediatric SLTs employed by either a HSC Trust in NI or the Health Service Executive (HSE) in the ROI. It was accessible via a web-link, for sixteen weeks. A total of 181 SLTs completed the survey. Circulation figures were available for four out of the five HSC Trusts in NI therefore an average response rate for NI was calculated using these figures. The response rate ranged from 32% to 86% across HSC Trusts, with the average response rate being 57%.

Recruitment

In NI, the participant information sheet with a link to the survey was sent to either the Head of Service or an identified Paediatric Team Manager in each of the five HSC Trusts for dissemination to their community based paediatric teams. In the

ROI, the participant information sheet was sent to the Secretary of the SLT Managers' Group by prior agreement. This was then forwarded to all SLTs with management responsibilities within the HSE for dissemination to their teams.

Materials

Based on key literature and previous studies (O'Toole and Hickey 2013, Van Dulm and Southwood 2013, Williams and McLeod 2012, D'Souza *et al*. 2012) possible question topics were identified for inclusion in the present study.

The survey contained thirty-three items which centred around five main categories:

1. Information about respondents (employer, work region, years of experience, competence in the Irish language);
2. Profile of bilingual English-Irish speaking children (proportion on caseload, language background, location/work setting);
3. Assessment of English language skills (assessments used, scoring of assessments);
4. Assessment of Irish language skills (assessments used, availability and training of interpreters, opinion on available resources, perceptions of assessment and potential challenges);
5. Irish Medium Education (knowledge of the sector).

Information was elicited via closed multiple choice, rating scale or matrix questions. Free text boxes were provided for responses which could not be pre-classified and to collect additional views (see Appendix A: Survey questions). As part of this project, qualitative telephone interviews were carried out with researchers who had developed tools for assessing language skills in Irish speaking children. For the purpose of the current paper, only the survey results and findings will be discussed.

Procedure

The questionnaire was developed and distributed via SurveyMonkey and was piloted on a convenience sample of fifteen community based paediatric SLTs from one NI HSC Trust. The SLTs involved in the pilot received the participant information sheet with a link to the online survey, via email. Participants were given 10 days to provide feedback via email or in person and suggested amendments were considered. Amendments made included adding two questions, one in relation to knowledge about the IME sector, and another about whether interpreters were trained in the administration of language assessments and changing from a yes/no response to a rating scale for frequency of use of standardised assessments.

Data Collection

Skip technology was used to enable respondents to answer only those questions which were relevant to them. Participants were deemed to consent to the storage of responses by completing and submitting the survey. Responses were anonymous and encouraged honest answers. All answers to the questionnaires were stored directly in a SurveyMonkey database. Data from the survey responses was coded, entered onto a spreadsheet, and analysed using SPSS (IBM Corp 2015). Descriptive statistics were used to characterise the numerical data. Associations between categorical variables were explored using chi-square. Cramer's V was used to calculate effect size. Free text responses were reviewed, and common themes identified, the number of responses for each theme was counted and those with the highest frequencies were reported on.

Results

The results of the survey are presented below.

Respondent information

Participants had the option to skip questions that were not relevant to them, and multiple answer questions were present. We have included the number of responses for a single option out of the total number of responses per question in parentheses.

52% (95/181) of respondents were employed by the HSE in the ROI and 48% (86/181) were employed by one of the HSC Trusts in NI. All five HSC Trusts and all four HSE regions were represented. The numbers of respondents from each area ranged from 17% (31/181) in Dublin Mid Leinster to 6% (11/181) in the Northern HSC Trust. Table 1 shows the breakdown of respondents by HSC Trust and HSE region.

Table 1. Numbers and proportion of SLT respondents by region.

Region	**%**	**n**
HSE Dublin Mid Leinster	17	31
HSE Dublin North East	14	26
HSE South	10	18
HSE West	10	18
Southern HSC Trust	11	20
Western HSC Trust	11	20
South Eastern HSC Trust	11	19
Belfast HSC Trust	10	18
Northern HSC Trust	6	11

In response to the number of years' experience, 34% (62/181) respondents had 5-10 years' experience working as an SLT, 21% (38/181) had less than 5 years and

20% (36/181) had more than 20 years' experience. Of the remainder, 15% (27/181) had 11-15 years' experience and 10% (18/181) had worked as an SLT for 16-20 years. Respondents indicated that they worked in a variety of clinical settings with 75% (132/175) spending all or part of their working time in Community Clinics/Primary Care Centres. Smaller numbers of respondents ranging from 15% (27/175) and below indicated that they spent all or part of their working time in other venues such as mainstream schools, Speech and Language Centres or early intervention settings.

Competence in the Irish language

Overall, 64% (105/181) of respondents indicated that they had either 'minimal' or 'no competence' in terms of understanding and using the Irish language. The proportion of respondents considering themselves to have either 'moderate competence' or 'high competence' in the Irish language was significantly higher for HSE staff in the Republic of Ireland (56%) compared to HSC staff in Northern Ireland (15%), ($\chi 2$= 52.18 (3), $p < 0.001$, effect size Cramer's V = 0.31).

Profile of Bilingual English-Irish Speaking Caseload

For the majority of respondents, bilingual English-Irish speaking children made up a small proportion of their caseload. One-quarter of respondents (42/169) had no bilingual English-Irish speaking children on their caseload. A further 61% (103/169) reported that less than 10% of their caseload was bilingual English-Irish speakers. Small numbers of respondents indicated other percentages, with 8% (13/169) indicating that bilingual English-Irish speaking children made up 11-20% of their caseload, 1% (2/169) indicating the proportion to be 21-30% and less than 1% (1/169) indicating that these children made up 31-40% of their caseload. The

remaining 5% (8/169) had caseloads which comprised over 60% bilingual English-Irish speaking children. These remaining respondents all worked for the HSE in the ROI.

Respondents were asked two questions in relation to the first language of the English-Irish speaking children on their caseloads. One question asked if they had English-Irish bilinguals on their caseload whose first language was a language other than English or Irish. Of the 168 respondents, more than one quarter, 26% (44/168), reported this to be the case. In a further question they were asked about the first language of the 'majority' of English-Irish bilinguals. Of the 132 respondents who answered this question 91% (120/132) reported the first language of the majority to be English, 7% (9/132) indicated the first language of the majority to be Irish, these respondents all worked for the HSE in the ROI, 2% (3/132) of respondents indicated that the first language of the majority of this caseload was a language other than English or Irish. Community Clinics/Primary Care Centres were reported by 79% (107/135) of respondents as the setting where most bilingual English-Irish speaking children were seen.

Assessment of English language skills

Respondents were asked whether they used standardised assessments to assess English language skills in bilingual English-Irish speaking children. 84% (106/126) of respondents reported using standardised assessments either sometimes, often or very often to assess English language skills in bilingual English-Irish speaking children. A small number, 5% (6/126), reported rarely using standardised assessments, with the final 11% (14/126) reporting that they never used standardised assessments when assessing English language skills in this caseload.

A total of fifty additional comments were recorded in the free text box for this question. Of those who reported using standardised assessments to assess English language skills, fifteen respondents added that they felt it was appropriate to use standardised assessments when the child's first language was English. A further five respondents commented that they used standardised assessments as these were a requirement for children to access additional services. Thirteen respondents added a comment to clarify that whilst they used standardised assessments these were for descriptive purposes only and they did not score the assessments.

A subsequent question asked specifically whether respondents computed and quoted standardised scores for these assessments, 72% (80/111) reported that they did. Analysis of these responses indicated that SLTs in the ROI were significantly more likely to compute and quote standardised scores when assessing English language skills in bilingual English-Irish speaking children. Specifically, of those who reported computing and quoting standardised scores, 72.5% (58/80) were working in the ROI and 27.5% (22/80) worked in NI. This difference was at a statistically significant level ($\chi 2 = 33.12$ (2), $p < 0.001$, effect size Cramer's V = 0.37). An additional question sought to explore this practice further. A total of 78 respondents answered this question, with two of the previous 80 respondents opting not to answer for unknown reasons. Respondents could tick all reasons that applied. The reasons provided for computing and quoting standardised scores are detailed in

Figure 1.

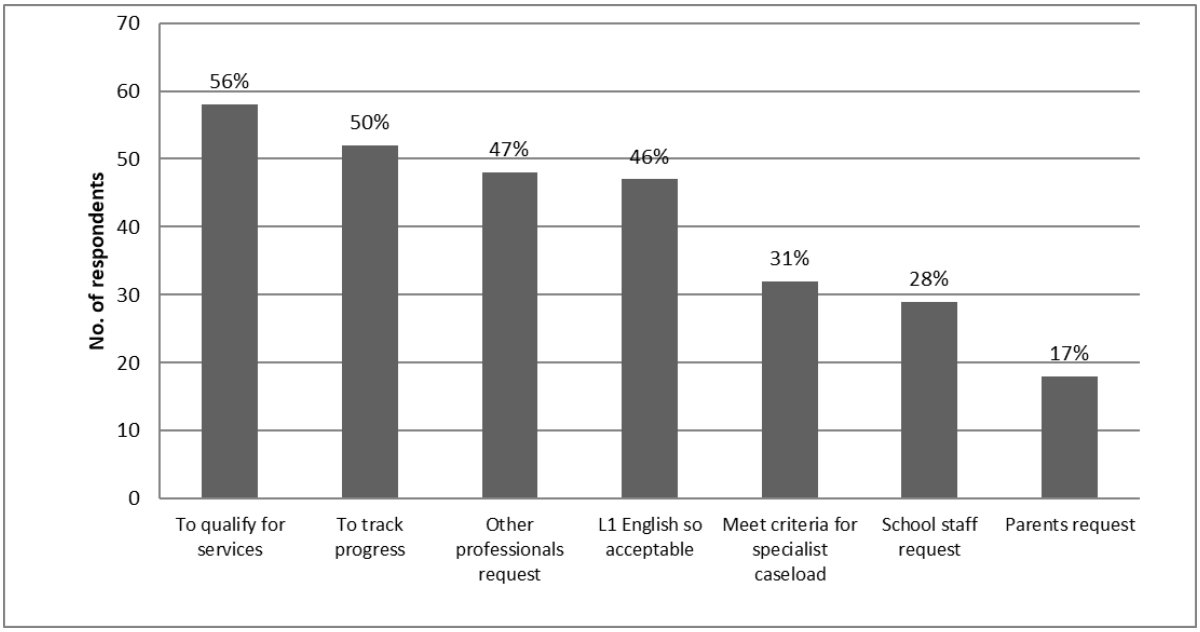

Figure 1: Reasons cited by SLTs for computing and quoting standardised scores when assessing the English language skills of English-Irish bilinguals.

Assessment of Irish Language skills

Most respondents (98%) agreed that assessment of Irish language skills was important if the child's first language was Irish (161/165). A high percentage 85% (134/165) agreed that assessment of Irish language skills was also important for bilingual English-Irish speaking children who had difficulties in their first language (be that English, Irish or another language). Just over one quarter of respondents to a further question, 26% (43/165), had experience in assessing Irish language skills. Of the 43 respondents who had assessed Irish language skills, 56% (24/43) were working in NI, and 44% (19/43) were working in the ROI. Only 8% of respondents (14/165) had been asked to carry out an assessment of Irish language skills by education staff or parents/carers.

In relation to the resources available to assess Irish language skills, 90% (149/165) of respondents did not feel they had sufficient knowledge as to the range of resources available. This was the opinion of respondents across both NI and the ROI.

Irish Language Interpreters

In relation to Irish language assessment, 60% of respondents (99/165) reported that their service had access to Irish language interpreters for face-to-face contacts. The number of respondents who had access to interpreters was similar for both NI and the ROI. A sizeable proportion, 29% (48/165) did not know if their service had access to Irish language interpreters. A small number of respondents, 8% (11/141) reported that the interpreters they had access to were officially trained in administering Irish language assessments. Of these 11 respondents, 8 worked in NI and 3 worked in the ROI.

Resources used to assess Irish language skills

Forty-one respondents answered a question detailing all of the resources they used to assess Irish language skills. A wide range of resources were used with informal analysis of language sample being the most popular tool (35/41). Own informal assessment was the next most popular assessment resource with 51% of respondents to this question reporting that they used this method (21/41).

A range of English language assessments translated by either respondents or interpreters were also reported to be used: Renfrew Action Picture Test (RAPT) (Renfrew 2010) and Renfrew Word Finding Vocabulary Test (RWFVT) (Renfrew 2010) were used by 43% of respondents (18/41) and standardised assessments such as Clinical Evaluation of Language Fundamentals (CELF) (Semel *et al*. 2004) were

used by 24% of respondents (10/41). Functional Language Across Countries (FLAC) (Millar-Wilson *et al.* 2013) was used by respondents in one of two forms, translated into Irish by respondent or interpreter 17% (7/41) and Irish language version 27% (11/41), the majority of these respondents worked in NI.

Smaller numbers of respondents, with all except one working in the ROI, reported using two designated Irish language adaptations of existing clinical tools; the Irish language adaptation of the MacArthur Bates Communicative Development Inventories (ICDI) (O'Toole and Hickey 2013) 12% (5/41) and the Irish language adaptation of the Language Assessment Remediation and Screening Procedure (ILARSP) (Hickey 1990), a language profiling tool, 10% (4/41). For this question an additional free-text box was provided which enabled respondents to record other assessments that the researcher might not have been aware of. No additional assessments were recorded here however two respondents indicated that they had translated three further assessments: Test for Reception of Grammar (TROG-2 or older) (Bishop 2003), the Reynell Developmental Language Scales (RDLS-III or older) (Edwards *et al*. 1997) and the Derbyshire Language Scheme (DLS) (Knowles and Masidlover 1982). Figure 2. shows the number of respondents using each type of assessment tool.

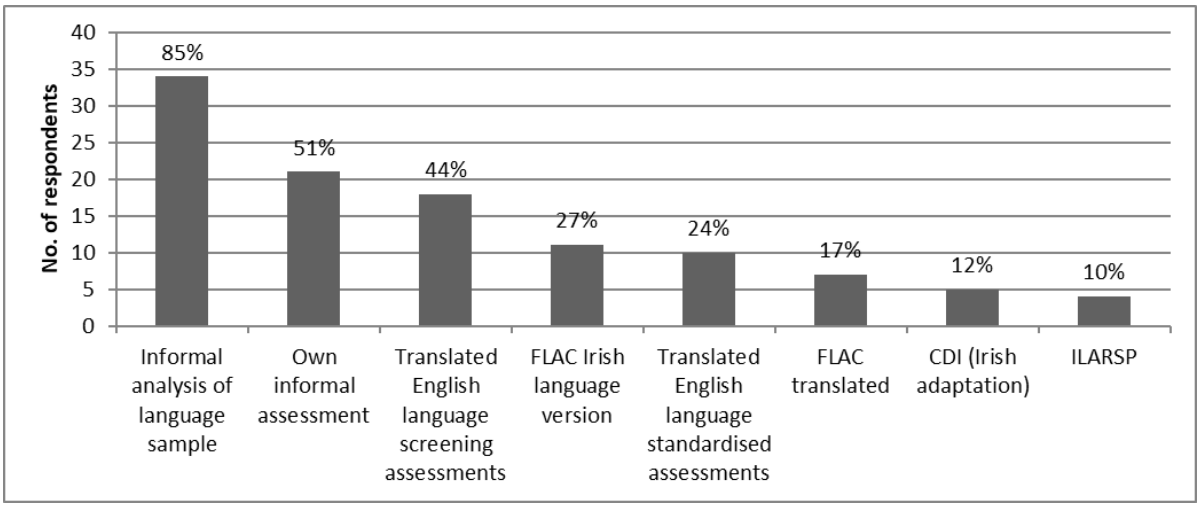

Figure 2: Number of SLTs using selected resources for assessing Irish language skills.

A further question sought to explore the areas assessed using the respondents' self-devised informal assessment tools. Sixteen respondents provided details of the areas assessed, respondents could tick all areas that applied. Responses included: understanding language concepts 69% (11/16), expressive/spoken vocabulary also 69% (11/16), ability to follow information carrying words/word levels 62% (10/16), phonology also 62% (10/16), receptive vocabulary 56% (9/16), sentence structure (expressive) 50% (8/16), narrative skills 44% (7/16), ability to understand 'Wh' questions 38% (6/16), grammar 31% (5/16) and one respondent indicated that they assessed phonological awareness using their own informal assessment. A free text box was provided so that respondents could indicate additional areas assessed, two respondents both employed by HSE West indicated that their departments had developed phonology assessments.

When asked for their opinion on the adequacy of available resources to assess Irish language skills, a small number of respondents reported that they were adequate,

2% (3/159). Of the remainder, 38% (61/159) felt the range of resources were inadequate and 60% (95/159) did not know whether or not they were adequate.

Perceptions of Irish language assessment

Further questions sought to explore the perceptions of SLTs in relation to Irish language assessment, focusing specifically on the challenges. Respondents were asked to rate how challenging they found the assessment of Irish language as compared to other languages (for example, Russian and Polish). Most respondents, 65% (104/159), reported that it was equally challenging. 36% reported that it was less challenging (41/159), and of these twenty-eight added an additional comment in the free-text box indicating that their own competence in the Irish language reduced the challenge. 9% of respondents (14/159) reported it to be more challenging; the reasons provided for this this were similar to the challenges identified in the next question plus the fact that parents lack of knowledge of the language increased the challenge.

Respondents were asked to select up to four out of 12 possible issues that were of most concern to them in assessing the Irish language. A total of 159 respondents answered this question. The issues of most concern are detailed in Table 2. A high number of respondents 65% (103/159) indicated that they were concerned about their lack of awareness as to the resources available. Relatedly, 35% (55/159) of respondents were concerned that there were limited resources available commercially to assess Irish language skills. A high number of respondents, 58% (93/159), ranked the absence of developmental norms for Irish language acquisition as an area of most concern. With respect to the language, some respondents, 32% (51/159), were concerned about their lack of knowledge about the Irish language.

Further areas of concern included general issues surrounding bilingual assessment such as: extra time required to assess both languages 37% (59/159), lack of experience in assessing languages other than English 37% (59/159), lack of knowledge as to how to assess languages other than English 14% (22/159) and insufficient knowledge in relation to bilingualism generally 11% (18/159). Two respondents selected the 'none of the above' option.

Table 2. SLTs' self-reported concerns relating to assessment of Irish language skills

Answer Options	**%**	**N**
I lack awareness as to the resources that are available	65	103/159
Absence of developmental norms for Irish language acquisition	58	93/159
I lack experience in assessing languages other than English	37	59/159
Extra time required to assess both languages	37	59/159
Limited resources available commercially to assess Irish	35	55/159
I lack knowledge about the Irish language generally	32	51/159
Interpreters not trained in administering speech & language assessments	22	35/159
Lack of confidence in feeding back findings to IME staff/parents	16	25/159
Lack of knowledge as to how to assess languages other than English	14	22/159
Increased demands Irish language assessment would place on our service	14	22/159

I have insufficient knowledge in relation to bilingualism generally	11	18/159
Our service does not have access to interpreters for face-to-face contacts	6	10/159
None of the above	1	2/159

Irish Medium Education

In relation to the Irish Medium Education Sector a high number of respondents, 78% (123/157), indicated that they were not satisfied with their level of knowledge about the sector and the models of immersion used.

Discussion

The current study examined the perceptions and practices of Speech and Language Therapists in relation to the assessment of bilingual English-Irish speaking children in community settings in Northern Ireland and the Republic of Ireland. Our findings indicate that many of the challenges faced by SLTs in assessing bilingual children in other countries are shared by SLTs in this study. Moreover, Irish is a minority endangered language with decreasing numbers of speakers and is typically acquired in a bilingual context with English as the 1st language. This complex environment, whilst common in other parts of the UK (for example, see Thomas *et al*. 2013 for Welsh) and across the world, creates additional challenges for SLTs. Despite the availability of guidance on working with bilingual clients (IASLT 2017, RCSLT 2018), some clinicians report confusion as to whether this should apply to the assessment of English-Irish speaking children. This indicates the need for

considerable work to be done in terms of our understanding of the acquisition of minority languages in various contexts. The provision of ongoing training to inform assessment practices and support clinicians working with bilingual clients, particularly in minority language contexts, is also key, as is supporting SLT's to build their knowledge of the language being assessed. Given the official recognition and status of the Irish language in NI and the ROI and the rights of speakers of the language to access services through Irish, these issues are particularly pressing. We now turn to a more detailed discussion of the findings in relation to our main research questions.

1. *What are the current practices of SLTs in the speech and language assessment of bilingual English-Irish speaking children in NI and the ROI?*

2. *What are the experiences and perceptions of SLTs in NI and the ROI with regards to the assessment of bilingual English-Irish speaking children?*

Current Practices

Bilingual English-Irish speaking children make up a small proportion of clients on community paediatric SLT caseloads. This is expected given that we are focusing on a minority language. Despite this, a large proportion of those surveyed reported that they did have bilingual English-Irish speaking children on their caseloads. Issues around assessment of this caseload were therefore relevant to most respondents.

In relation to the first language of bilingual English-Irish speaking children, many respondents reported this to be English. This is in keeping with information from the NI School Census 2014/2015 indicating that 91.8% of children in Irish Medium

Education facilities (Primary School age) in NI had English as their home language. Interestingly, a small number of respondents indicated that for the majority of Irish speaking children on their caseload, the first language was a language other than English or Irish. This finding parallels the Welsh school language statistics (Thomas *et al*. 2013) and reflects the increasingly complex language background and assessment needs of clients on SLT caseloads.

The majority of respondents reported using standardised assessment resources at least some of the time when assessing the English language skills of English-Irish speaking children. Many respondents indicated that whilst they used these assessments, it was for descriptive rather than diagnostic purposes. Whilst recent guidance from RCSLT (2018) cautions against using standardised assessments with bilingual clients, there is an acknowledgement that if used, they should augment other assessment methods and be reported only descriptively. SLTs should be mindful that children in Irish Medium Education may have a qualitatively different English language profile to monolingual English language speakers. For example, they may have acquired classroom vocabulary, mathematical language, and curriculum concepts in Irish only. Their absence in English may be due to lack of exposure outside the classroom and should not be automatically interpreted as language delay. Children should not be expected to have both words in both languages for all categories (Stow and Pert 2015). In addition, SLTs should be aware that discontinuation rules for some standardised assessments might also give misleading results as bilingual children may only have encountered ‘easier’ structures in their first language and more ‘complex’ structures later in their additional language (Stow and Pert 2015).

When assessing English language skills, more SLTs in the ROI reported computing and quoting standardised scores than SLTs in NI. The practice of quoting standardised scores runs contrary to guidance from professional bodies both in NI and the ROI. Standardised assessments are based on normative data from monolingual children. Bilingual children may not have reached the same level of proficiency due to variations in input and exposure to the different languages they know and this can lead to misidentification of language disorder (Li'el *et al*. 2019). This includes bilingual English-Irish speaking children who may spend a significant proportion of their week in school being exposed to Irish only. These assessments are therefore inadequate for the diagnosis of language difficulties in bilingual children due to the limited consideration of linguistic, dialectal or cultural variation and the unique developmental trajectories of these children (Caesar and Kohler 2007, DeLamo White and Jin 2011).

When asked in a further question for their reasons for computing standardised scores a total of forty-seven respondents indicated that they computed and quoted standardised scores when assessing English language skills as they felt this was acceptable if the child's L1 was English. The fact that both the clinician and child share a common first language, the dominant language in the community, may result in failure to identify these children as having similar assessment needs to other bilingual clients. In addition, lack of a consistent definition of bilingualism may contribute to confusion for clinicians. Stow and Pert (2015: p4) are clear in highlighting that the definition of bilingual should also apply to the "mainly monolingual individuals who have no or minimal experience of an additional language but who are expected to acquire an additional language such as Gaelic", whereas the IASLT guidance adopts a more specific definition referring to a 'basic

level of functional proficiency or use'. Given that many children have no exposure to Irish prior to commencing IME it is possible that SLTs, particularly in the ROI, following IASLT guidance may feel that these children do not meet this more specific definition and therefore the guidance for bilinguals does not apply. This highlights the value in SLT services adopting universally agreed definitions to ensure standard and equitable approaches are taken to service delivery with bilingual caseloads. Additional rationale provided for quoting standardised scores varied. In-line with the findings of O'Toole and Hickey (2013), SLTs in the ROI cited external pressures to produce standardised scores to gain access to additional resources for clients as a key driver for this practice. Given the context by which children acquire Irish, and the fact that the majority have English as their first language it may be more difficult for other professionals and stakeholders to understand restrictions on SLT's scoring standardised English language assessments in this population. This has wider implications for all bilingual children and highlights the need for broader training of professionals and stakeholders to ensure bilingual children have the same rights as monolingual children to access additional services without the need for standardised scores. Some respondents acknowledged that whilst they provided standardised scores, they were aware that this was not in-line with current guidance.

UK best practice guidelines (RCSLT 2018) state that SLTs should assess children in all languages they hear and speak in order to accurately profile their language abilities. The current study found that just over one-third of those with bilingual English-Irish speaking children on their caseloads had actually carried out an assessment of Irish language skills. In a later question however, high numbers of respondents (134/165) agreed that assessment of Irish language skills was

important if the child had difficulties in their first language, be that English, Irish or another language. There are several potential reasons for this disparity. First, Irish language assessment will not be required for all bilingual English-Irish speaking children. There will, for example, be those who have successfully acquired English as their first language and might be known to SLT for an issue not directly related to language. In these cases, SLTs will not be concerned with acquisition of an additional language (Stow and Pert 2015). Second, the challenges of carrying out Irish language assessment, such as the extra time required, lack of experience in assessing languages other than English and lack of knowledge about the Irish language were cited by respondents. The challenges experienced by our respondents are similar to those cited in previous studies (D'Souza *et al.*, 2012, Teoh *et al.* 2018) and may mean SLTs are reluctant to engage in Irish language assessment. Finally, the context in which children are acquiring Irish may also have an impact. The majority of Irish speaking bilingual children on SLT caseloads in NI and the ROI have English as their first language. The recommendation for these children is that SLT intervention be delivered in the home language English, at least in the first instance, then L2 'where appropriate' (Stow and Pert 2015, RCSLT 2018). The initial purpose of Irish language assessment is to gain a comprehensive picture of ability across all languages. Since initial intervention is to be delivered in English, assessment of Irish language skills might be viewed as not being such a pressing need. In busy clinical settings with limited or lack of relevant assessment resources this might make clinicians less likely to prioritise Irish language assessment. Failure to assess the minority language however, risks overlooking important aspects of the child's language development. Children in IME are required to access the curriculum and communicate in school exclusively through Irish, by

not assessing Irish, SLTs may miss the opportunity to fully understand the challenges the child is facing in the bilingual environment. SLT feedback and recommendations to education staff cannot be fully informed if the language of the classroom has not actually been assessed.

Respondents reported that Community Clinics/Primary Care settings were the venue where most English-Irish speaking children were seen. Children acquiring a minority language in an immersion education setting may not for the most part be exposed to or speak the minority language outside of that setting. This is a different context than for other bilingual speakers who will often use the minority language at home, with friends and extended family in various contexts. Setting the scene is important when assessing bilingual children (Stow and Pert 2015) so for IME children consideration should also be given as to whether the clinical environment is the most appropriate setting to assess these children.

In sum, the findings of this study indicate that, whilst some SLTs are aware of best practice guidelines from RCSLT (2018) and IASLT (2017) and are striving to meet these, others due in part to external pressures are struggling to meet these standards and to fully understand their relevance and application. This is supported by qualitative comments from SLTs indicating that there is some confusion as to whether these children meet varying definitions of bilingualism. These findings are in-line with findings from international research which report a gap between clinical practice and official guidance on language assessment (Marinova-Todd *et al.* 2016).

Experiences and Perceptions of SLTs

High numbers of respondents cited lack of developmental norms for Irish language acquisition as a challenge to assessment. This is a well-known gap in the literature

on bilingual language acquisition more generally, (DeLamo White and Jin 2011, D'Souza *et al.* 2012, Muckley 2015). D'Souza *et al.* (2012) found that the lack of knowledge about second language acquisition was a barrier for Canadian SLTs in appropriately assessing and treating linguistically diverse clients. More research is required on the typical pattern of language acquisition in languages other than English and particularly minority languages such as Irish to allow the identification of clinical indicators for language disorder in bilingual speakers (Muckley 2015). Parents need information about what to expect in typical Irish bilingual acquisition, and the current dearth of information in this area leaves parents relatively unsupported (see O'Toole and Hickey 2017). Whilst absence of necessary developmental information to interpret language samples is widely acknowledged as a barrier in bilingual language assessment, it is accepted that for Irish, attainment of the psychometric properties needed to provide true normative data is not possible. The number of L1 Irish speakers is small and decreasing (O'Toole 2009) and children are acquiring Irish in a variety of contexts with significant variability in dialects, the quality and quantity of input and age of exposure. This poses a significant challenge to researchers aiming to develop norms for Irish either as a first or as an acquired language.

Two key issues emerged in relation to the perceptions and experiences of SLTs in assessing Irish language skills in bilingual children. First, a lack of awareness about appropriate assessment resources and second, the limited availability of specific tools to assess Irish language skills. The issue of limited resources for the assessment of bilingual Irish-speaking children is also noted within the literature (O'Toole and Fletcher 2008, O'Toole and Hickey, 2013).

In relation to resources used to assess Irish language skills, respondents cited only three resources developed or adapted for the assessment of Irish language skills: the FLAC, (Millar-Wilson *et al.* 2013), the ILARSP, (Hickey 1990b) and the ICDI, (O'Toole and Hickey 2017). Whilst these assessments are valuable to SLTs assessing Irish language skills, they each have their limitations in the context of assessing the bilingual English-Irish speaking children identified in this study. The FLAC examines mainly lexical components of early language development and focuses for the most part, at single word level. Many children in IME will require assessment beyond this early level. The ILARSP was developed using data from Irish first language acquisition whereas this study found that the majority of English-Irish speaking children known to SLT services have English as their first language. Finally, whilst the dialectal coverage of the Irish adaptation of the MacArthur-Bates CDI was extended to include the Ulster dialect (O'Toole and Hickey 2017), it is only suitable for very young children (8-36 months).

In sum, our findings clearly indicate that despite some recent developments in the range and number of resources for assessing Irish language skills, (for example, see Müller *et al.* 2019, Nic Fhlannachadh and Hickey 2019, and O'Toole *et al.* 2020) the availability for clinical use is limited. Those which are available have limitations in terms of appropriacy for the full range of Irish language speakers.

Given the limitation in Irish language assessment resources, it is not surprising that almost half of the clinicians who had assessed Irish language skills reported using their 'own informal assessment'. This finding is in-line with Van Dulm and Southwood (2013) whereby high numbers of respondents reported using self-devised informal assessment materials to assess Afrikaans-speaking children. This

initiative whilst time consuming, is commendable and is an alternative to translating assessments or using norms that are inappropriate. In the absence of appropriate assessments individuals and services may wish to develop their own informal assessments (Stow and Pert 2015).

Informal analysis of language sample emerged as the most popular tool for assessing Irish language skills. This is a positive finding in the context of minority language assessment and is in keeping with current research and best practice guidelines (Stow and Pert 2015, RCSLT 2018). Language sampling and analysis is a culturally and linguistically valid method of profiling a child's language strengths and needs (RCSLT, 2018) and should therefore be a key tool in the accurate assessment of a bilingual child's expressive language ability.

The sociocultural complexities of assessing speakers of minority languages requires a combination of approaches as outlined by DeLamo White and Yin (2011). A multipronged approach to assessment incorporating the complexities of the bilingual context for individual children may support respondents in this study in addressing the assessment challenges highlighted. One promising alternative assessment approach not cited by respondents is dynamic assessment (DA) (for example see Hassan et al. 2013). DA has proven useful in differentiating language disorder from difference in culturally and linguistically diverse populations (Kapantzoglou et al. 2012, Hasson et al., 2013). Crucially, DA removes the typical linguistic bias of static assessment procedures and taps into the child's underlying learning potential. DA should form a key element of the assessment toolkit for bilingual clients (IASLT 2017, De Lamo White and Yin 2011).

The current study revealed that many SLTs who reported assessment of Irish language to be less challenging cited their own competence in the language to be of benefit. This is in keeping with results from previous studies (D'Souza *et al.* 2012) whereby 72% of clinicians reported that not speaking the language of the client was a barrier to assessment and intervention. SLTs in the ROI had a much higher level of competence in the Irish language than SLTs in NI. This is expected given that Irish is a compulsory part of the curriculum in primary and secondary education in the ROI but not in NI. In NI, a significant proportion of the population may have limited or no exposure to the Irish language. Many previous studies in other countries have called for an increase in numbers of bilingual SLTs to address the mismatch between clinicians and the languages which clients speak. An increase in the numbers of Irish speaking SLTs may not be possible or viable in NI and the ROI however, this study does support the idea that bilingual assessment is less challenging when clients and clinicians both speak the assessed language. There is also the issue that whilst SLTs may speak the language, they may not have the underlying knowledge of the linguistics of the language which would enable them to provide an accurate and detailed analysis. Given the rights of Irish speakers in both NI and the ROI to access services in Irish this working knowledge of the linguistics of the language requires attention in the context of enhanced SLT training. Some respondents cited assessment of Irish language skills to be more challenging than other languages. Respondents noted that because parents didn't speak the language, they were not able to support the SLT. This has clinical relevance and should be borne in mind by SLTs particularly for children with Speech Sound Disorder whereby the person deciphering the potentially unclear speech is an unfamiliar listener, the interpreter.

Conclusions and Implications

The results of the current study contribute to our understanding of the assessment practices of Speech and Language Therapists in relation to the minority language skills of bilingual children. Our findings are particularly relevant for the many SLT services throughout the world who provide intervention to children attending immersion education programmes. The findings indicate that, despite clients and clinicians frequently sharing a common language, the challenges of assessing a minority language such as Irish remain. Indeed, the unique context, whereby, most children learning Irish have English as their first language and have limited domains of exposure to the minority language outside of education, appears to exacerbate confusion for some clinicians. Uncertainty is voiced in respondents' comments as to whether current guidance for working with bilingual clients even applies in this context. A universal and internationally agreed definition of bilingualism would provide further clarity for all those delivering services to bilingual populations. SLTs may require education on the full range of bilingual contexts that children may experience to broaden their understanding. Further, what is known about the potential impact of these different contexts on typical language development should also be explored to enhance clinicians' knowledge when working with this caseload.

Best practice guidelines as issued by RCSLT (2018) and the IASLT (2017) provide clear direction for clinicians seeking to assess bilingual clients. This study, whilst confirming that many SLTs are aware of current guidance and are endeavouring to follow this, also highlights the many practical challenges experienced when assessing speakers of a minority language. The ongoing external pressure to provide standardised scores is one such challenge. The availability of training on

specific aspects of bilingualism for all stakeholders within the sector would provide greater understanding amongst other professionals of the challenges around assessment. This, in turn, would further support SLTs in meeting professional standards. This study identifies practices which are in keeping with recommended standards such as the development of informal assessments and the use of informal analysis. Our findings highlight among other things, the limited availability of appropriate tools to support clinicians in the assessment of Irish language skills. This is consistent with international research which indicates a clear resourcing gap in bilingual language assessment to support SLTs in meeting professional standards and guidance. The development of specific standardised tools for assessing Irish language skills is unrealistic however further development of specific non-standardised tools would clearly reduce the many challenges of assessment in this group and support SLTs to meet current best practice guidelines. Dynamic assessment methods (Hasson *et al.* 2013) could also be utilised as part of a multi-component assessment that includes information on context, use and exposure to individual languages (De Lamo White and Yin 2011).

This study highlights a clear need for longitudinal studies of English-Irish speaking children to provide data around language acquisition norms and clinical markers for language impairment. Most Irish speaking children on the caseloads of the respondents in this study are educated within the Irish Medium Education sector and are acquiring Irish as sequential bilinguals. This context and the immersion model utilised will have a unique influence on the trajectory of their language acquisition. We need to fully understand the educational context for Irish learning that exists and its implications on norms for language acquisition. Within both NI and the ROI, high levels of funding have been invested to promote, preserve, and

support both the Irish language and the Irish Medium Education sector. Whilst this is commendable from a linguistic perspective, we now need to go beyond this and address the needs of children struggling with typical language acquisition within the sector. An essential first step in this process is to support and enable clinicians to use a multipronged approach to the assessment of all bilingual children that considers the unique contexts in which they are learning and using language.

Acknowledgements-*Removed for review*

References

BIALYSTOK E, and SULLIVAN, M., 2017, Studies in Bilingualism, vol. 53: Growing Old with Two Languages: Effects of Bilingualism on Cognitive Aging (Amsterdam: Benjamins).

BISHOP, D., 2003, Test for Reception of Grammar, 2nd edition (TROG-2). Pearson.

CAESAR, L., and KOHLER, P., 2007, The state of school-based bilingual assessment: Actual practice versus recommended guidelines. Language, Speech, and Hearing Services in Schools, **38**, 190-200.

CENTRAL STATISTICS OFFICE, 2017, Census 2016: The Irish Language. [online]. Available: https://www.cso.ie/en/media/csoie/releasespublications/documents/population/2017/7._The_Irish_language.pdf [accessed March 2021].

NATIONAL STATISTICS AND RESEARCH AGENCY, 2012, Census 2011: Key statistics for Northern Ireland. [online] Available: https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/2011-census-results-key-statistics-northern-ireland-report-11-december-2012.pdf [accessed September 2018].

CHONDROGIANNI, V., and JOHN, N. 2019, Tense and plural formation in Welsh-English bilingual children with and without language impairment. International Journal of Language and Communication Disorders, **53**(3), 495-514.

COMHAIRLE NA GAELSCOILAIOCHTA, What is Irish Medium Education? [online] Available: http://www.comhairle.org [accessed 29 September 2019].

D'SOUZA, C., KAY-RAINING BIRD, E., and DEACON, H., 2012, Survey of Canadian Speech-Language Pathology Service Delivery to Linguistically Diverse Clients. Canadian Journal of Speech-Language Pathology and Audiology, **36**(1), 18-39.

DELAMO WHITE, C. and JIN, L., 2011, Evaluation of speech and language assessment approaches with bilingual children. International Journal of Language and Communication Disorders, **46**(6), 613-617.

DOCKRELL, J., LINDSAY, G., ROULSTONE, S., and LAW, J., 2014, Supporting children with speech, language and communication needs: an overview of the results of the Better Communication Research Programme. International Journal of Language and Communication Disorders, **49**, 543–557.

EDWARDS, S., FLETCHER, P., GARMAN, M., HUGHES, A., LETTS, C., and SINKA, I., 1997, Reynell Developmental Language Scales III, The University of Reading Edition. GL Assessments.

GAELSCOILEANNA TEO, Statistics on the Irish Medium Education Sector. [online] Available: http://www.comhairle.org [Accessed 29 September 2019].

GATHERCOOLE, V., and THOMAS, E., 2009, Bilingual first-language development: Dominant language takeover, threatened minority language take-up. Bilingualism: Language and Cognition, **12**(2), 213–237.

GROSJEAN, F., 2010, Bilingual: Life and Reality (Cambridge, MA: Harvard University Press).

HASSON, N., CAMILLERI, B., JONES, C., SMITH, J., and DODD, B., 2013. Discriminating Disorder from Difference using Dynamic Assessment with Bilingual Children. Child Language Teaching and Therapy, **29**(1), 57-75.

HICKEY, T., 1990b, ILARSP: A Grammatical Profile of Irish, Clinical Linguistics and Phonetics, **4**, 363-76.

KNOWLES, W., and MASIDLOVER, M., 1982, The Derbyshire Language Scheme. Derbyshire.

IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. (Armonk, NY: IBM Corp).

IRISH ASSOCIATION OF SPEECH AND LANGUAGE THERAPISTS, 2017, Guidelines for Speech and Language Therapists Working with Linguistically Diverse Service Users.

KAPANTZOGLOU, M, RESTREPO, M., and THOMPSON, M., 2012, Dynamic assessment of word learning skills: Identifying language impairment in bilingual children, Language, Speech and Hearing Services in Schools, **43**(1), 81-96.

LI'EL, N., WILLIAMS, C., and KANE, R, 2019, Identifying developmental language disorder in bilingual children from diverse linguistic backgrounds, International Journal of Speech-Language Pathology, **21**(6), 613-622.

LUND, E., KOHLMEIER, T., and DURAN, L., 2017, Comparative Language Development in Bilingual and Monolingual Children with Autism Spectrum Disorder: A Systematic Review. Journal of Early Intervention, **39**(2), 106-124.

MARINOVA-TODD, S. H., COLOZZO, P., MIRENDA, P., STAHL, H., KAY-RAINING BIRD, E., PARKINGTON, K., GENESEE, F., 2016, Professional practices and opinions about services available to bilingual children with developmental disabilities: An international study. Journal of Communication Disorders, **63**, 47–62.

MILLAR-WILSON, F., MCGUIGGAN, L., and TROLAN, B., 2013, Functional Language Across Countries (FLAC) (Black Sheep Press).

MUCKLEY, S-A., 2015, Language Assessment of native Irish speaking children: towards developing diagnostic testing for speech and language therapy practice (PhD Thesis, National University of Ireland: Galway).

MÜLLER, N., MUCKLEY, S-A., and ANTONIJEVIC-ELLIOTT, S., 2019, Where phonology meets morphology in the context of rapid language change and universal bilingualism: Irish initial mutations in child language, Clinical Linguistics and Phonetics, **33**(1-2), 3-19.

NORTHERN IRELAND SCHOOL CENSUS, IRISH MEDIUM EDUCATION 2014/2015 Key Statistics. [Online] Available: https://dera.ioe.ac.uk [Accessed 29 September 2019].

NIC FHLANNCHADHA, S., and HICKEY, T., 2019, Assessing children's proficiency in a minority language: exploring the relationships between home language exposure, test performance and teacher and parent ratings of school-age Irish-English bilinguals, Language and Education, **33**(4), 340-362.

O'TOOLE, C., and FLETCHER, P., 2008, Developing Assessment Tools for Bilingual and Minority Language Acquisition. Journal of Clinical Speech and Language Studies, **16**, 12-27.

O' TOOLE, C., 2009, Sealbhu na Gaeilge ag Naionain: Early Language Acquisition of Irish (PhD Thesis, University College: Cork).

O'TOOLE, C., and HICKEY, T., 2013, Diagnosing Language Impairment in Bilinguals: Professional Experience and Perception. Child Language Teaching and Therapy, **29**(1), 91-109.

O'TOOLE, C., and HICKEY, T., 2017, Irish-English Communicative Development Inventory ICDI: Irish-English Adaptation of MacArthur-Bates Communicative Development Inventory.

O'TOOLE, C., and HICKEY, T., 2017, Bilingual language acquisition in a minority context: using the Irish-English Communicative Development Inventory to track acquisition of an endangered language. International Journal of Bilingual Education and Bilingualism, **20**(2), 146-162.

O'TOOLE, C., NÍ SHÍTHIGH, D., MOLAMPHY, A., and WALSH, E., 2020, Findings from the first phase of developing a receptive vocabulary test for the Irish language. International Journal of Bilingualism, **24**(4), 572-587.

PARADIS, J., RUSK, B., DUNCAN, T., AND GOVINDARAJAN, K., 2017, Children's Second Language Acquisition of English Complex Syntax: The Role of Age, Input, and Cognitive Factors Annual Review of Applied Linguistics, **37**, 148–167.

RENFREW, C., 2010, Word Finding Vocabulary Test (4th edition). Oxford: Speechmark Publishing Ltd.

RENFREW, C., 2010, The Action Picture Test (4th edition). Oxford: Speechmark Publishing Ltd.

ROYAL COLLEGE OF SPEECH AND LANGUAGE THERAPISTS, 2018, Clinical Guidelines for Speech and Language Therapists, Bilingualism: Working with bilingual clients/patients with speech, language and communication needs. [online] Available: https://www.research.manchester.ac.uk/portal/files/69559895/mainbilingualism_1_.pdf [Accessed September 2019].

SEMEL, E., WIIG, E.H., and SECORD, W.A., 2004, Clinical Evaluation of Language Fundamentals, 4th edition (CELF-4). The Psychological Corporation/A Harcourt Assessment Company.

STOW, C., and PERT S., 2015, SLT Assessment and Intervention: Best practice for children and young people in bilingual settings and in particular Gaelic Medium Education (GME) (RCSLT Clinical Guidelines: Royal College of Speech and Language Therapists).

TEOH, W., BREBNER, C., and MCALLISTER, S., 2018, Bilingual assessment practices: challenges faced by speech-language pathologists working with a predominantly bilingual population. Speech, Language and Hearing, **21**(1), 10-21.

THOMAS, E., GATHERCOLE, V., and HUGHES, E.K., 2013, Sociolinguistic Influences on the Linguistic Achievement of Bilinguals: Issues for the Assessment of Minority Language Competence. In V.C.M Gathercoole (eds), Solutions for the Assessment of Bilinguals, pp. 175-193.

ULJAREVIĆ, M., KATSOS, N., HUDRY, K., and GIBSON, L., 2016, Practitioner Review: Multilingualism and neurodevelopmental disorders – an overview of recent research and discussion of clinical implications. Journal of Child Psychology and Psychiatry, **57**(11), 1205-1217.

VAN DULM, O., and SOUTHWOOD. F., 2013, Child Language Assessment and Intervention in Multilingual and Multicultural South Africa: Findings of a National Survey. Stellenbosch Papers in Linguistics, **42**, 55-76.

VERDON, S., MCLEOD, S., and MCDONALD, S., 2014, A geographical analysis of speech-language pathology services to support multilingual children. International Journal of Speech-Language Pathology, **16**, 304–316.

VERDON, S., MCLOED, S., and MCDONALD, S., 2019, Supporting culturally and linguistically diverse children speech, language and communication needs: Overarching principles, individual approaches, **58**, 74-90.

WILLIAMS, C., and MC LEOD, S., 2012, Speech-Language Pathologists' Assessment and Intervention Practices with Multilingual Children. International Journal of Speech-Language Pathology, **14**(3), 292-305.

.