

Early Intervention in Gaelic-medium Education

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Abstract: This article reports on research within 48 Gaelic-medium classrooms. A pilot study comprised a further two schools. The investigation involved a review of assessment tools in English. Existing literature points to poor readers differing from normal readers with respect to phonological processing skills in English. The possibility of dyslexia for children receiving Gaelic-medium education is just as relevant as it is for children in English-speaking schools, but there are few assessment tools available to Gaelic-medium primary teachers. In order to ascertain which pupils require specific intervention, a programme of early assessment needs to be put in place. The author designed a tool in Gaelic and 368 pupils were tested by their teachers in the main study. Results show that the tool will enable a Gaelic-medium teacher to recognise when and with what particular aspect a child is having difficulty. At an early stage in their education there is still time to intervene.

Keywords: Early intervention; Gaelic-medium education; assessment; phonological awareness

Introduction

As a dyslexia advisor in my local authority, I cannot stress enough to teachers the importance of early identification of children who may need early intervention support in literacy. Early Intervention refers to an initiative started in 1997 in Scotland when considerable investment by the Scottish Government was made to try to raise standards of literacy and numeracy in the first two years of primary schooling. Early prevention and intervention programmes were drawn up to target and support pupils who might be at risk of failure in later stages of their education. Among these were individual baseline screening assessments carried out by teachers with pupils at the start of Primary 1.

These give valuable information on each child's development in early literacy and there are a wide variety of tools available in English. However to date no tests exist in Gaelic-medium education as established in a previous study comparing the assessment procedures in Gaelic-medium education with those in the English-medium schools housing most Gaelic-medium units (Lyon, 2003). The extent to which children are identified depends greatly on the type of assessment or screening used, and the improvement thereafter depends on the intervention put in place. In order to ascertain which pupils require specific intervention, a programme of early assessment needs to be

put in place (Fraser *et al*, 2001). Results can be a prompt to carry out further assessments of pupils with literacy and phonological awareness difficulties. Identifying pupils as early as possible in their education can allow intervention to be put in place before issues of low self-esteem and behaviour occur. This comes under the term commonly known as 'Early Intervention'. This paper discusses the research carried out in the course of designing and evaluating a tool to assess phonological awareness in Gaelic.

Literature review

Assessment can be used to identify a baseline for a pupil and help to confirm what a teacher suspects of a pupil's strengths or weaknesses, but as previously mentioned, no baseline assessment exists for Gaelic-medium education, which has only been in existence in Scotland since 1985. In 2003, all English-medium schools in Scotland used some form of baseline assessment whereas 44% of Gaelic-medium schools did not use any screening tool at all; 20% used a screening tool in English; 36% translated existing tests into Gaelic or made up their own assessment (Lyon, 2003). One drawback of translating existing assessments is that the vocabulary used may often not be familiar to the children and most items will lose vital phonological processing information in the translation into Gaelic. There was no consensus within education authorities nor any in-service training or guidance given. In Gaelic-medium education many Early Intervention approaches used in English-medium schools were not shared with Gaelic-medium schools. Wilkinson *et al* (1998), following their review of developments in the construction and uses of baseline assessment in England and Wales, as well as pre-school assessment in Scottish schools, felt that such assessment could provide the basis for planning future learning. Certainly this does not appear to have changed, as A Curriculum for Excellence 5 states that "staff should use assessment information from a wide range of sources to monitor learners' progress and plan next steps in learning" (Scottish Government, 2010, p. 20).

Assessment can be predictive in nature, to obtain information on how a pupil may perform in future aspects of the curriculum. Snowling and Stackhouse (1996) held the view that children identified through assessment to be at risk of suffering reading difficulties could make up the gap at an early age much more easily and quickly than older children. A child can be assessed for diagnostic purposes, to provide information that can throw some light on a pupil's difficulties, for example, particular patterns of difficulty. These patterns may be cognitive in nature, such as memory, organisation and speed of processing. Certain patterns may also be recognised in phonological awareness, word recognition, spelling errors, omission of letters, words or parts of

words and reversals. A difficulty can be diagnosed through assessment (Cline & Shamsi, 2000). This type of assessment is often used by Educational Psychologists or Support for Learning staff (although several tests are restricted to use by Educational Psychologists only).

The possibility of dyslexia for children receiving Gaelic-medium education is just as relevant as it is for children in English-speaking schools but there are no assessment tools available to Gaelic-medium Primary teachers and very little research has been done in this field. MacLeod and MacLeod (2001: 13) state that teachers “had concerns that time may be lost as a result of not having such tools in order to diagnose difficulties more accurately earlier.” Indeed, HMIE (2005) in their report ‘Improving Achievement in Gaelic’ found there to be a lack of suitable resources to assess and diagnose the difficulties that some pupils experience in the Gaelic-medium classroom. While early screening does not focus on dyslexia, dyslexia is a specific learning difficulty which can be highlighted by early screening. In 2010, the Assessing Dyslexia Online Toolkit was launched as a National Resource by the Scottish Teacher Education Committee (2010). Gaelic-medium education is mentioned, as is English as an Additional Language (EAL), but no assessment resources are given. In Scotland, Deponio et al. (2000) found that there was generally a lack of appropriate assessment procedures for dyslexia for bilingual pupils. When one examines the section ‘What to look for’ in the Assessing Dyslexia Online Toolkit the signs of difficulty point in the direction of phonological awareness. This refers to a child’s awareness of speech sounds and the sound system of the language – rhyme, rhythm and alliteration.

Existing literature points to poor readers differing from normal readers with respect to phonological processing skills in English (Hatcher, 2000; Muter, 2003). Although phonological awareness difficulties may not be the only indication of dyslexia, they have a strong link with reading success. The majority of studies on dyslexia are usually focused on monolingual pupils and most assessments of phonological awareness are constructed in English (Snowling, 1995; Stanovich, 1998; Reid, 2003). Most research on bilingualism has tended to focus on pupils who do not have any additional support needs. Recent studies of children who speak languages other than English recognise that phonological awareness is language-specific and dependent on the phonology of the language of assessment (Everatt *et al*, 2000).

Most early readers and writers in the Gaelic-medium classroom are learners of the Gaelic language and therefore often rely on English phonology upon which to build sound/letter relationships. This is understandable as English is the only language many of the pupils use outside school, often living in a non-Gaelic speaking community. For historical reasons, many fluent Gaelic speakers do not often read Gaelic, and some not

at all, decreasing a parent's ability to be involved fully in their child's acquisition of reading. Ionad Chaluum Chille Ìle (2003), in their Phonics Report, concluded that the synthetic phonics approach, as part of the reading curriculum, is the most effective method of teaching, which could be extended into the home. As there are considerably more sounds in Gaelic than in English, traditional teaching of sound-letter correspondence to decode phonically regular words in English will not work in a language where the sounds are more important than the letters. Gaelic orthography is actually a lot more phonemic than English; that is to say "the correspondence of individual sounds to their written form is more regular and so for early-readers an unknown word is more predictable because the system is more regular" (Ionad Chaluum Chille Ìle, 2003:3). Onset and rime (where the onset is the first phoneme and the rime is the remainder of the syllable) does not work in Gaelic because of the variation of initial and final sounds. However, it is possible to segment and blend syllables and phonemes and delete initial or final phonemes. Rhyming is more problematic in Gaelic as the focus is usually on the vowel sounds with no reference to the consonants at the end of the rhyme syllable. The stress falls on the first syllable in Gaelic words, therefore the rhyme vowel is often found in the penultimate syllable rather than the end syllable. This can be seen in many Gaelic songs and poems. Everatt et al (2000) found that rhyme tasks were significant measures of phonological skills across bilingual and monolingual groups of pupils. Using the information gathered in the literature I took the decision to devise an assessment tool of phonological awareness to screen pupils in Gaelic-medium education.

Research methodology

The research data was collected in four phases. Initially an audit was made of tests of phonological awareness in English that are currently available and used widely in the UK by Educational Psychologists, Speech and Language Therapists, and Support for Learning Teachers and to a lesser extent by Classroom Teachers in order to establish the most appropriate subtests to include in a Gaelic test. A review of 22 existing screening tools in use in English-medium schools was carried out. It was necessary to ascertain what skills should be tested and by examining a large number of tests used in many English-medium schools, it was possible to select the most appropriate subtests. This analysis revealed no fewer than 21 different subtests ranging from letter knowledge and syllable blending to speech rate and visual sequencing. Each of the subtests was examined for its suitability in the Gaelic-medium classroom and all subtests involving print concepts were ignored as this study was only concerned with oral skills. As this study was focussing purely on phonological awareness, subtests such as word reading, writing and visual sequencing were not considered for inclusion. A child requires a thorough

understanding of the sounds rather than the letters and it was the intention to find a suitable method of finding out if a child had difficulty breaking words into syllables, repeating multi-syllabic words, identifying and giving rhyming words in Gaelic. Some of the tests involved more than phonological awareness skills and reading and writing tasks were deemed to be inappropriate for the early stages of immersion education where children have had limited exposure to Gaelic. It is acknowledged that fuller assessments including such subtests are useful for older pupils when determining reading achievement or assessing for dyslexia.

Having examined the stages of phonological awareness in English, a comparison of phonological awareness skills in other languages was made in order to find out if some of these skills are language-specific. The development of an assessment task to measure phonological awareness should be sensitive to the phonology of Gaelic. Taking the differences in phonology into account, as well as the vocabulary used in the early stages of Gaelic immersion education, eight subtests were prepared and a Gaelic screening test was devised to assess pupils' phonological awareness, a good predictor of reading success (Goswami and Bryant, 1990; Hatcher, 2000). The test items were checked by five independent individuals for accuracy of language and also vetted to see if each question examined what it purported to, for example, accurate phoneme deletion. The individuals included a Head Teacher, Head of Service, Quality Improvement Officer, Class Teacher and Lecturer in Gaelic. The finalised test was prepared for distribution to schools. The subtests were arranged in order according to the progression of phonological awareness acquisition – rhyme detection and production, syllable and phoneme blending, initial and final phoneme deletion, polysyllabic repetition and sound/letter recognition. Each item was printed on card and the images drawn and inserted into the appropriate subtest. The eight subtests were contained in a stimulus folder which was positioned in easel-form between pupils and teacher, stimulus picture on one side, question and answer on the other (see below).



Letter cards were made for the letter/sound recognition subtest and were enclosed at the back of the folder. A CD giving sample test items for each subtest was recorded and attached to the inside front cover. Sixty such folders were made, one for each Gaelic-medium school or unit. Instructions and record sheets were devised and included with the test. Answers were scored 1 or 0 on the record sheet.

Permission was sought from Heads of Education in each local authority which makes provision for Gaelic-medium education before Head Teachers in all Gaelic-medium schools and units were contacted. Following a successful pilot involving two schools, a copy of the test and record sheets to be completed by the teachers were sent to schools. This second phase of the research involved 48 Gaelic-medium schools and units and the screening test was administered to the pupils in Primary 2 and 3 of the units/ schools by Gaelic-medium teachers. The results were returned to the researcher to be analysed to see if they measured phonological awareness and if there was sufficient information to create a diagnostic tool for assessing pupils' phonological weaknesses. One school agreed to test-retest pupils in order to check the reliability of the assessment.

The third phase involved analysing the results of the questionnaires that had been completed by the teachers who had administered the test about the assessment process. Finally, more than a third of the respondents, who had volunteered to be contacted by telephone, completed semi-structured interviews in order to gather the opinions and views of Gaelic-medium Class Teachers who had administered the tests to gain a clearer insight into their experiences and to give further information on the identification of poor readers. NVivo 8 was used to analyse these qualitative data. Data on pupils' level of fluency, language background and pre-school experience were also gathered and examined.

Sample

There are relatively few Gaelic-medium schools/units in Scotland, only 60 in 2008. **Appendix I** shows the distribution of these indicating the local authorities providing Gaelic-medium education. It was intended that all teachers of Primary 2 and 3 pupils in the immersion stage of Gaelic-medium education should be involved in this research. In this way the research covered maximum sampling. There are only 2,256 pupils in primary schools receiving Gaelic-medium education in Scotland at present (Bòrd na Gàidhlig, 2010) although there are 2,000 pre-school children. In the main study, 368 pupils from Primaries 2 and 3 were tested by their teachers representing 60% of the total population in Scotland for Gaelic-medium pupils in Primaries 2 and 3. Table 1 shows the number of pupils in each age band.

Table 1: Age bands and number of pupils tested

Age Bands	Number of Pupils	Percentage
5:00 – 5:06	5	1.36%
5:07 – 6:00	49	13.32%
6:01 – 6:06	69	18.75%
6:07 – 7:00	119	32.34%
7:01 – 7:06	66	17.93%
7:07 – 8:00	52	14.13%
8:01 – 8:06	8	2.17%
TOTAL	368	100%

Eleven education authorities offering Gaelic-medium education were involved, which equates to 86% participation rate in the research. Forty-five class teachers who administered the assessment to their pupils completed a questionnaire, representing a 91% response rate. It had been hoped that 10% of these respondents would volunteer to be interviewed by telephone but in fact 39% volunteered. Participants consisted of Head Teachers, Deputes, Principal and Classroom Teachers and Support for Learning staff.

Evidence

The test results from 48 schools were returned for analysis using SPSS 17 and examined successfully for validity and reliability. The internal consistency of the test was checked using Cronbach's alpha coefficient. Six of the reliability coefficients were greater than or equal to 0.7 demonstrating that each subtest is measuring the same attribute. The Cronbach alpha coefficients for the two rhyming subtests were 0.65 and 0.69. These subtests are slightly lower than the other subtests and if their Cronbach alpha values had been less than 0.3 it could have indicated that these subtests were measuring something different from the test as a whole. However, if the coefficient for Rhyme Production was rounded, it would equal 0.7 which can be considered as reliable. The construct validity was assessed by inter-correlating all the subtest scores. Strong correlations were found between six of the subtests ($r \geq 0.5$) and medium correlations between the others ($0.5 \geq r \geq 0.3$). Factor Analysis showed that phoneme deletion, phoneme blending and letter knowledge explained 41% of the score variation. Rhyme detection and production explained 13% of the score variation. Tables of norms were created giving centiles for the total test score and the development of phonological awareness in Gaelic can be said to be age progressive. Tables of norms were also created for each subtest using six-month age bands, which should assist a teacher in

identifying particular areas of weakness which can be addressed with specific intervention. A graph plotting the subtest scores enables anyone to see the results at a glance.

Discussion

The study showed that it is possible to assess pupils' phonological awareness using Gaelic at an early stage and the tool can identify pupils at risk of reading failure before they have proceeded too far in their education. Teachers responded very positively to receiving this trial project and several commented that it had made a difference to their teaching since using the test and being able to identify specific skills for reinforcement. 89% of responding teachers thought that the test accurately identified areas of phonological weakness. Requests for its return to schools have been made as well as interest in any future publication. The test is easy to administer, the scoring clearly stated and any classroom teacher can administer it given that the assessment of an individual's progress is a key strand of the new Curriculum for Excellence. In Curriculum for Excellence Building the Curriculum 5 (Scottish Government, 2010, p. 49), under Roles and Responsibilities, it states that teachers should "plan, design and carry out assessment as an on-going part of teaching and learning and periodically use specific assessments, tests as appropriate". This assessment could provide CPD opportunities for staff who previously may not have appreciated the importance of identifying specific phonological awareness skills. There was some confusion noted between the terms Phonological Awareness and Phonics – a term referring to sound-letter correspondence. It is important that testers are skilled in phonological awareness and the range of skills involved in order that good use is made of the test.

Some teachers found that it took time to assess each child individually as they had not been in the habit of using baseline screening tests which are now commonplace in the monolingual classroom. Most agreed that the classroom teacher was the best person to administer the test especially as there is little support for learning teachers in Gaelic-medium classrooms. Nearly all teachers remarked on the scarcity of resources for assessing and teaching pupils with additional support needs and all acknowledged that finding suitable Gaelic rhymes was very hard. There was no agreement as to when children should be assessed, ranging from Primary 1 through to the end of Primary 3. Although the vast majority of pupils come from non-Gaelic-speaking backgrounds, teachers could not agree about the levels of fluency of their pupils. When asked whether there were any noticeable differences in performance between fluent Gaelic speakers and learners, there was no consensus of opinion. Nevertheless, the means of the total test scores for phonological awareness showed a considerable difference - the

mean score of pupils whom teachers thought were fluent Gaelic speakers was 71 whereas the mean score of pupils who were not deemed to be fluent Gaelic speakers was 65 (See **Appendix II**).

Discussion of Findings

This study examined existing screening tests in use in English-medium classrooms as well as assessments of phonological awareness in bilingual pupils in other countries, which led to the design of a screening tool for use in the Gaelic-medium classroom. The potential benefit of this research is to assist teachers to confidently identify weaknesses in phonological awareness in the Gaelic-medium classroom but there may also be implications for other bilingual classrooms. Results show that the tool will enable a Gaelic-medium teacher to recognise when and with what particular aspect a child is having difficulty. It should provide a summary of what learners have achieved and can be used to consolidate their learning. The results can contribute to planning the next stages of learning for individual pupils. Evidence from the test-retest results demonstrate the screening test's ability to identify weaknesses which, once identified, can be improved through intervention. At an early stage in a child's education there is still time to intervene. Results from the test could be used to give assurance to parents, teachers and others that progress in learning is developing in line with expectations. It can also be used to indicate future improvements in learning and teaching, as suggested by some of the interviewees in promoted posts. The assessment tool has been accepted for publication by one of the UK's leading publishers of educational assessment materials and should be available to schools in January 2012.

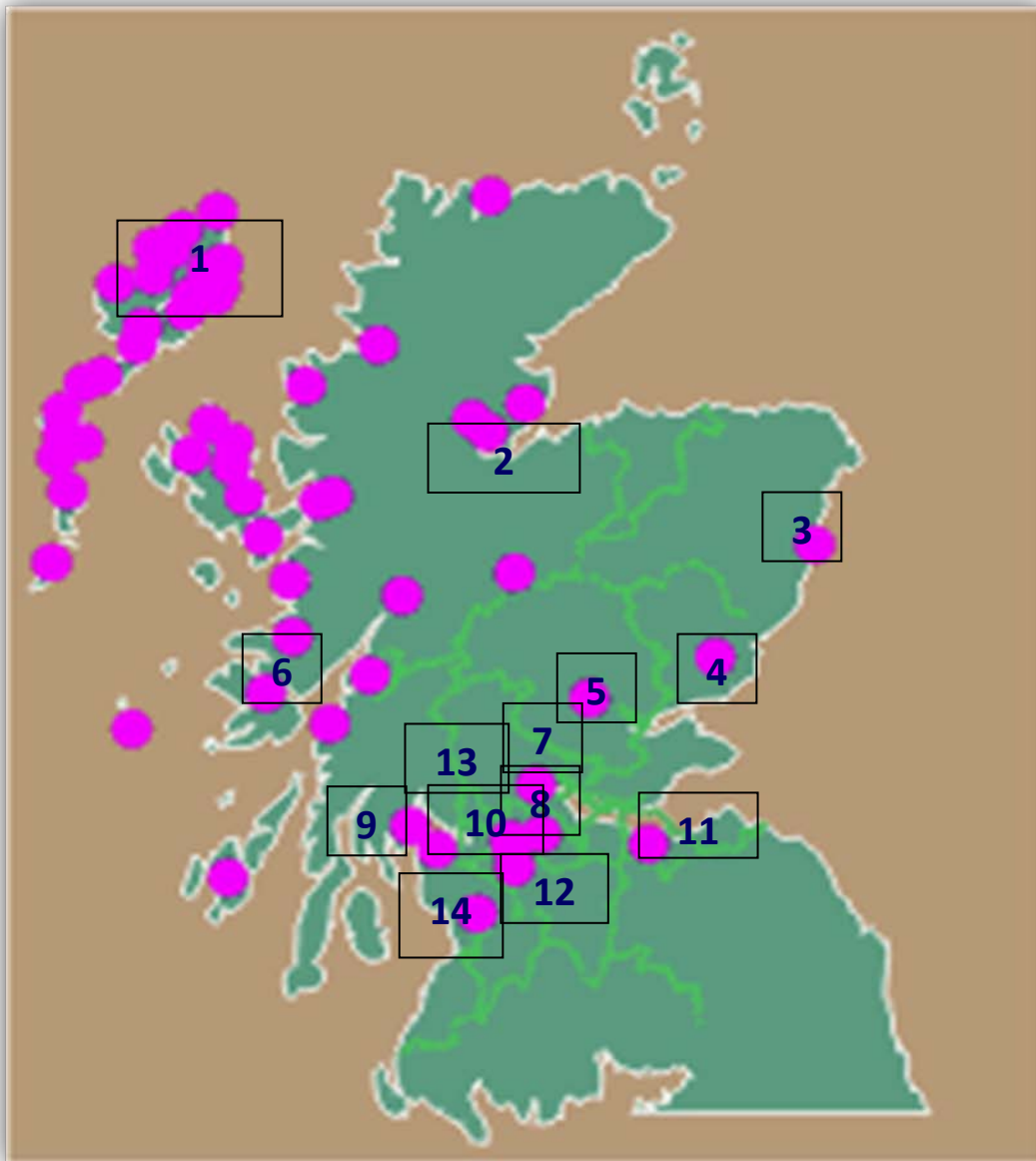
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Appendix I

Map of Local Authorities with Gaelic-medium Schools



Adapted from Gaelic4parents.com

1 = Western Isles	6 = Argyll & Bute	11 = Edinburgh
2 = Highland	7 = Stirling	12 = South Lanarkshire
3 = Aberdeen City	8 = East Dunbartonshire	13 = Glasgow
4 = Angus	9 = Inverclyde	14 = East Ayrshire
5 = Perth and Kinross	10 = North Lanarkshire	

Appendix II

Figure 1: Frequency of test scores for fluent speakers

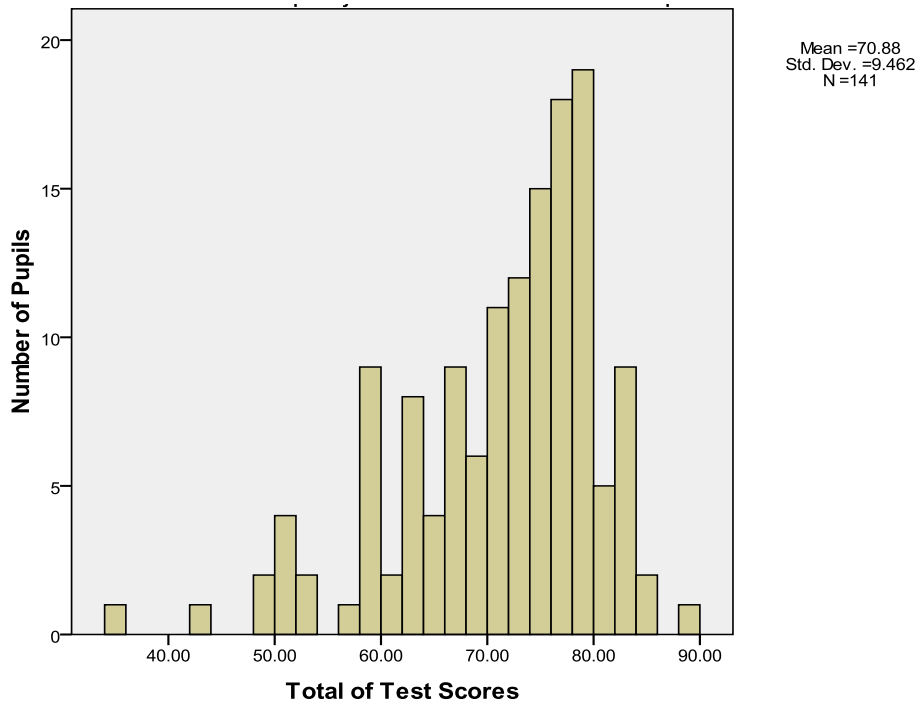


Figure 2: Frequency of test scores for non-fluent speakers

