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Towards ecologically valid assessment in early literacy

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This article explores aspects of early language and literacy that may predict later literacy development. It explores a range of assessment procedures used for oral language, vocabulary, sentence structure and phonology and early reading and writing. The article then describes a small-scale study which highlights the disconnections between the oral language and early literacy and suggests that learning to read and write is akin to learning a second language for all children. Finally, the article suggests that young children’s early language and literacy can best be assessed using ecologically valid procedures rather than the narrow high-stakes testing of one or two literacy components.

Keywords: early literacy; assessment; ecological validity; oral language; phonological awareness; vocabulary; reading; writing

Introduction

The search for early predictors of later literacy development is a worldwide phenomenon. The importance of the years before school as a foundation for later reading and writing has been documented in the European Union and in Asia (Li, Corrie, & Wong, 2008; Tafa, 2008). In the USA, the increased focus on school readiness within early childhood programmes has motivated the development of high-stakes assessment procedures where the outcome of a standardised early literacy test can be the sole determining factor for major policy decisions (Snow & Van Hemel, 2008). In Australia, concerns about the learning outcomes for the hardest-to-reach families have prompted research into the difference preschool education can make in the lives of children, and how literacy outcomes can be enhanced within early education programmes (Fleer & Raban, 2007).

The type of assessment tools used in early language and literacy depends on the goal. If tracking children’s early literacy outcomes for accountability purposes is the goal, this can lead to the use of high-stakes, standardised forms of assessment. In this approach it can be argued that less detailed information may be required, because for normally developing children, the ‘various components of the language system develop in synchrony’ (Snow & Van Hemel, 2008, p. 102). If assessment is for identifying and diagnosing children with language and literacy difficulties or delays, the assessment will be more detailed and often undertaken by language and literacy specialists. If assessment is to find out what children already know and can do in order to build a responsive curriculum, then using ecologically valid assessment tools linked to the content and pedagogy of the early childhood curriculum shows promise. Burgin

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and Hughes (2009) suggest that some assessment procedures are multi-purpose and can be used for accountability purposes and also for planning teaching and learning. Ecologically valid forms of assessment with young children can be carried out in environment of early childhood preschools and schools using play-based assessment, curriculum-based assessment and dynamic assessment procedures (Thurman & McGrath, 2008). Ecologically valid forms of assessment have a practical use as they mirror the demands of everyday situations. Linked to this, Fleer (2002) argues for a sociocultural approach to assessment which would focus not just on the individual but on what the child can achieve with the support of teachers, artefacts, cultural values and knowledge systems. While some sociocultural assessment procedures have been developed (Carr, 2001), the challenge remains to develop ecologically valid, socioculturally and environmentally responsive assessment tools (for understanding children’s literacy development) grounded in the local community’s cultural constructions of meaning.

Ecologically valid assessment tools were developed in a longitudinal Australian study of 4–10-year-old children in diverse socio-economic communities where environmental print concepts, reading everyday catalogues and engaging in curriculum-based writing were used to describe the literacy development (Hill, Comber, Louden, Rivalland, & Reid, 1998, 2002). This longitudinal study found that many children did not follow predictable trajectories based on their earlier literacy assessments. Overall, the factor that made a difference to children’s literacy development was teachers’ assessment of literacy, diagnosis of children’s strengths and weaknesses and responsive teaching. The study also found that as the children developed, some assessment items became ineffectual as they quickly reached a threshold effect. As the children developed, other assessment items were introduced which were more suited to the children’s current literacy levels. The next section describes the many components commonly linked to or used to predict later literacy development.

The many components of language and literacy

The domain of language and literacy is complex because of the many component skills that can be assessed and because disagreement persists about how these component skills relate to one another and to significant long-term outcomes. Snow and Van Hemel (2008) write that various oral language and literacy components are of obvious importance in their own right and that arguments about their predictive relationship to each other or to later developmental outcomes are unnecessary. For example, learning of the letters of the alphabet has been viewed as central to early literacy outcomes. However, Paris (2005) points out that knowing the letters of the alphabet may be ‘constrained’ to a small set of knowledge that is mastered in relatively brief periods of development. In comparison vocabulary knowledge is ‘unconstrained’ and develops over the duration of learning. Prescriptions to teach ‘constrained’ skills like letter knowledge usually only lead to temporary gains and only in skills aligned with the ‘constrained’ skill.

Nevertheless, due to political pressure and the rush to use research evidence for legislated policies and evaluation of intervention programmes, researchers have vigorously explored the many components that may provide predictive information about the future school success of young children (National Early Literacy Panel, 2008; NICHD, 2005). In the USA, a meta-analysis of 500 research articles showing the rela-
relationships between children’s early abilities and skills and later literacy development (National Early Literacy Panel, 2008) found six precursor literacy skills or variables that have medium-to-large predictive relationships with later measures of literacy development. These variables include:

- alphabet knowledge of the names and sounds associated with printed letters;
- phonological awareness or the ability to detect, manipulate or analyse the auditory aspects of spoken language (including the ability to distinguish or segment words, syllables or phonemes), independent of meaning;
- rapid automatic naming of letters or digits in sequence of random letters or digits;
- rapid automatic naming of objects or colours in sets of pictures or objects;
- writing letters in isolation on request or writing one’s own name; and
- phonological memory which is the ability to remember spoken information for a period of time.

Other precursor early literacy skills were correlated but only moderately, with later literacy development and these included: oral language, concepts about print, vocabulary and visual processing which is matching or discriminating between visual symbols. This article now explores a range of assessment procedures used to explore links between the aspects oral language, reading and writing and how these connect with later literacy development.

Oral language
The importance of oral language has been a focus in many studies of children in the years prior to formal schooling (Dickinson & Tabors, 2002; NICHD, 2005). Young children need to have control over several aspects of oral language prior to starting the beginning to read process – phonology, vocabulary, syntax, discourse and pragmatics (Snow, Burns, & Griffin, 1998). Research has shown that the size of children’s vocabulary at age three is strongly associated with learning to read and reading comprehension at the end of third grade (Hart & Risley, 2003). Dickinson and Tabors (2002) found the scores that kindergarteners achieved on measures (receptive vocabulary, narrative production and emergent literacy) were highly predictive of their scores on reading comprehension and receptive vocabulary in fourth and seventh grade. Within oral language there are several characteristics: word meanings (semantics), sentence structure (syntax), the architecture of words and word parts (morphology) and sounds (phonology) (Richgels, 2004).

The classic approach to studying very early childhood oral language is to analyse a transcription of the child’s speech to find out the amount of talk per minute, the mean length of utterances and responsiveness to adult talk. This approach can be very time-consuming, and therefore Snow and Van Hemel (2008) suggest that vocabulary is the component skill that is most commonly assessed due to it being a relatively straightforward process. Vocabulary assessment has been well utilised in the Peabody Picture Vocabulary Test (Dunn & Dunn, 2007) and the Expressive One-Word Picture Vocabulary Test (Gardner & Brownell, 2000).

There is also increasing evidence regarding the importance of including oral language measures of extended discourse including production or retelling of stories and explanations, as this involves both comprehension and production of language. Assessing a child’s extended discourse about a topic may provide more information
than the child’s everyday conversations. Dickinson and Tabors (2002) write that extended discourse is talk requiring participants to develop understandings beyond the here and now and requires the use of several sentences to build a linguistic structure, such as in explanations and narratives.

**Phonological awareness**

It is well established that phonological awareness relates to later reading development (Adams, 1990; Byrne, 1998; Goswami & Bryant, 1990; Iverson & Tunmer, 1993). Richgels (2004) points out children are born able to perceive phonemes. For example, from birth babies can perceive the difference between /s/ and /z/. Richgels also writes that in the study of oral language the greatest focus of research has been on phonology, and, even then, mostly on a subset of phonological knowledge, the awareness of phonemes. Anthony, Lonigan, Driscoll, Phillips, and Burgess (2003) investigated the order of acquisition of phonological sensitivity skills among preschool and kindergarten children. In the study, phonological sensitivity was examined in terms of four levels of linguistic complexity (identifying words, syllables, onsets and rimes such as c-at and finally identifying phonemes). These findings supported a developmental framework of increasing phonological sensitivity with phonemic awareness at the most complex level. Many teachers assess children’s developing phonemic awareness when beginning school using the procedure developed by Yopp (1995) as this provides a way of finding out how children prefer to segment spoken words into syllables, onset and rime or individual phonemes.

**Syntax and grammar**

The use of syntax or grammar in oral language has been identified as important for beginning reading comprehension and vocabulary development (Bowyer-Crane et al., 2008; New Zealand Ministry of Education, 2009). It is argued that children with a high competence in oral language sentence construction bring rich narrative language to the new task of reading and writing. The Record of Oral Language (Clay, Gill, Glynn, McNaughton, & Salmon, 2007) was developed to measure children’s oral syntax. However, it may be argued that many of the sentences in the Record of Oral Language have a structure similar to written language which uses more complex embedded syntax structures. In contrast to written language, the syntactic structure of oral language is more likely to be fragmented with clauses and phrases strung together, false starts and repetitions and abandoned intonation units (Purcell-Gates, 2001). For example, it is obvious there is a difference between informal everyday oral language and written language when one listens to the syntactic structures in a formal written speech when it is read aloud.

**Vocabulary**

A child’s oral vocabulary development is one of the most visible and important aspects of language acquisition in children (Richgels, 2004). The number of words in a child’s vocabulary is an indicator of his or her ability to use language in varied contexts and for multiple purposes. However, the everyday spoken language that children hear has fewer rare words compared to the rare words that occur in books read aloud. Hayes and Ahrens (1988) state that the lexical input from conversations is a
limited source of learning new words outside of the 5000 most common terms. To develop lexical knowledge requires extensive reading across a broad range of subjects. Young children’s oral language vocabulary, when enhanced through the shared reading of picture books either in English or their primary language, has been shown to strengthen the vocabulary acquisition of English language learners (Roberts, 2008). The development of children’s vocabulary and syntax is related to either hearing books read aloud or from independent reading. Measures of children’s receptive vocabulary are often undertaken using the Peabody Picture Vocabulary Test (Dunn & Dunn, 2007), and for expressive vocabulary, the Expressive One-Word Picture Vocabulary Test (Gardner & Brownell, 2000) is often used. Children’s oral language vocabulary is linked to later reading comprehension which is why many early literacy intervention projects focus on the development of children’s vocabulary.

Alphabetic knowledge
To understand the alphabetic principle, children require some phonemic awareness and letter recognition (Adams, 1990). Letter recognition involves knowing the names and the sounds the letter can represent (Clay, 2002). Rapid automatic naming of letters or digits has been identified as an important element for reading achievement (Uhry, 2002) and, if lacking, may be a significant indicator of a reading delay or disability (Bowers & Swanson, 1991). Rapid automatic naming involves taking visual information (a letter) and translating it into a phonological system (its name). Assessing rapid automatic naming is relatively simple as it involves merely testing how quickly children can name a series of numbers or digits in sequence of random letters and digits. A study of kindergarten children and their competencies in phonemic awareness, one-to-one correspondence and rapid automatic naming in relation to early reading found that speed in letter naming was directly related to the success of fingerpoint reading, and it was suggested that high competence in this area frees processing space for other components of reading (Uhry, 2002), such as reading fluency and phoneme decoding. In rapid automatic naming, children are asked to name the items as quickly as they can and are scored according to the time taken to respond.

Many national and statewide education systems’ high-stakes assessment procedures use the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Nonsense Word Fluency which is a timed test of children’s knowledge of the alphabetic principle. DIBELS assesses the ability to blend letters into words in which letters represent their most common sounds (Kaminski & Good, 1996). The student is allowed one minute to produce as many letter-sounds as he/she can, and the final score is the number of letter-sounds produced correctly in one minute. However, it can be argued that reading nonsense words is only a very small and short-lived component of early literacy development.

Print concepts
Emergent literacy also generally involves understanding of print or the concept that print represents spoken language. Concepts of print may involve book handling, letter identification, ‘reading’ environmental print or familiar books and the notion that writing conveys a message. In addition, there may be some phonological analysis of printed words. Assessment of concepts of print usually involves providing the child with a book and then posing questions to elicit information from them as in Clay’s...

Book reading
The development of book reading often begins with observing how children interact with books from an early age. Sulzby’s (1985) Familiar Storybook Scale has been used to assess development of book handling and awareness of print and pictures. The following scale moves from labelling to attending to print:

- **Attending to pictures, not forming stories** – the child looks at the pictures in the book, labelling or making comments about them.
- **Attending to pictures, forming oral stories** – the child looks at the book’s pictures and weaves a story across the pages. However, the child’s intonation sounds like he or she is telling an oral story. The listener must be able to see the pictures to follow the story.
- **Attending to pictures, forming written stories** – the child reads by looking at the book’s pictures, and the child’s wording and intonation sounds like reading. The listener does not usually have to see the pictures to follow the story.
- **Attending to print** – the child attends to the print rather than to the pictures when attempting to read the story. The child may refuse to read because of print awareness, may use only selected aspects of print (e.g., letter–sound relationships) or may read conventionally.

Further studies of book reading of narrative and expository texts found that young children read narrative and expository texts differently (Pappas, 1993). There is evidence that emergent readers do have control of a repertoire of registers, with a range of setting-specific language, for example, speaking in an informal register, writing in a scientific register and they can apply them to different text genres. Duke and Kays (1998) report on a study where the teacher reads aloud information books to children aged four and five years for three months. After this period, the students made substantial gains in their knowledge of several key features of information book language. When the children were asked to pretend to read an unfamiliar wordless information book, they used the appropriate information book language.

Reading book levels
Over the past decade, levelled texts or ‘little books’ with finely graduated levelling of text difficulty have become a literacy staple for beginning readers (Pitcher & Fang, 2007). Levelled books, often organised from Level 1 to 24, are sets of books used for instructional and assessment purposes (Brabham & Villaume, 2002; Hill, 2001). The use of sets of levelled books has been influenced by Reading Recovery (Clay, 1993), an early intervention programme, where teachers select texts at an appropriate level of difficulty to match the reader’s instructional level. This is known as matching the ‘right book’ to the ‘right reader’ (Pitcher & Fang, 2007). Reading Recovery utilises running records of a child’s oral reading (Clay, 2002) as a day-to-day formative assessment, and this involves the practice of teachers’ marking errors while students read, figuring a reading accuracy rate, and analysing the types and qualities of students’
errors or ‘miscues’. The scoring of a child’s reading by book level takes into account descriptions of students’ miscues and the results of the comprehension questions. A book level, from 1 to 24, may be assigned when the child reads aloud a levelled text at just the right level of accuracy which is 90–95% correct. If the child reads aloud a levelled text at below 90% accuracy, the book is judged to be too difficult, and if reading accuracy is above 95%, the book is judged to be too easy. For example, if a child reads a Level 2 book at 90–95% accuracy, then the child’s oral reading accuracy can be assessed at reading at Level 2. In this example, a Level 2 book contains just the right amount of difficulty and challenge for that particular child (Hill, 2006).

Reading fluently at an appropriate rate, accuracy and expression has been identified as important for overall reading development (NICHD, 2000). Hasbrouck and Tindal (2006) suggest that to measure reading fluency, students read for one minute on an age-appropriate passage, and this yields an accuracy score that can be compared with oral reading fluency norms. For example, first-grade students who are reading 40 or more words correct per minute on unpractised text passages are by the end of the year at low risk of future reading difficulty. Oral reading fluency has been used in high-stakes testing using DIBELS; however, research by Shelton, Altwerger, and Jordan (2009) suggests that the students who read faster are not necessarily the better comprehenders. If students are grouped on the basis of the rate of oral reading fluency alone, this fails to take into account each student’s unique strengths and needs. Shelton et al. (2009) suggest the use of teacher analysis of oral reading miscues similar to running records (Clay, 2002) and analysis of students’ retellings for comprehension.

**Writing**

When young children begin to write, they need to pay conscious attention to the written language structure which involves choices to do with semantics, syntax and phonology. For example, a four-year-old beginning speller who wants to write ‘I have a chair’ has to consider word order and meanings, and when writing the word ‘chair’ the child needs to pay attention to phonemes in a way that they never had to when learning to speak (Richgels, 2004). Assessing the development of emergent writing can be used to assess children’s understanding of print conventions and spelling (Diamond, Gerde, & Powell, 2008).

Sulzby’s (1990 as cited in Enz & Morrow, 2009) research into children’s writing found seven broad categories of early writing: drawing as writing, scribble writing, letter-like units, non-phonetic letter strings, copying from environmental print, invented spelling and conventional writing. Children often include several of these forms of writing while composing, so the categories are not necessarily neat and hierarchical. While exploring the relationship between writing and children’s understanding of letters, Diamond et al. (2008) found that children, whose writing was more sophisticated, knew the names of more letters, understood more about print concepts and were more sensitive to initial sounds of words. In this study, the writing assessment employed three different approaches to score the children’s name-writing.

The use of writing samples to assess literacy development from kindergarten to fourth grade occurred in a study by Burgin and Hughes (2009). The school district had a different writing rubric for each grade level and provided examples of writing to illustrate the criteria within each rubric. The kindergarten rubric was on a five-point scale (1 = scribble stage, 2 = isolated letter, 3 = transitional, 4 = stylised writing and 5 = writing). First- and second-grade rubric mirrored the state’s benchmark score
categories of 1 = below basic, 2 = basic, 3 = proficient and 4 = advanced. The third category ‘proficient’ had a checklist of several writing behaviours in each of five categories: content, style, organisation, language/word choice and sentence structure.

Arama and Biron (2004) compared reading and writing assessment tools. They suggest that rather than using a battery of tests, preschools and schools could focus on collecting samples of reading and writing scores that are credible for teachers and generate results that could be used for both formative and summative decisions. The teacher training required to obtain reliable results would also create more qualified teachers and more ecologically valid assessment.

Exploring the relationships between oral language and early reading

Moving from the many components of language and literacy, the following small study highlights some of the issues concerning connections between oral language and beginning reading when five-year-old children are entering school (Hill & Launder, 2010). The research followed the formative and design methodology of Reinking and Bradley (2007) where research takes place in authentic environments and is grounded in developing understanding by seeking to accomplish practical and useful educational goals. Of concern to the teachers was the relatively poor performance of some student groups in the area of oral language. This was an issue of significant concern for the teachers, so they decided to assess the oral language of the children and implement an intensive and tailored oral language intervention programme designed to narrow the gap between language-rich and language-delayed children. At the school, diversity was the norm, as the children came from a complex range of cultural backgrounds including many recently arrived immigrants from Iraq, Afghanistan, Serbia, Sudan and other African countries, as well as a small cohort of Aboriginal students. The school had a very high proportion of low-income families.

The research questions guiding this study were:

- In what ways do five-year-old children’s use of oral language vocabulary and phonological awareness connect to children’s beginning literacy?
- In what ways do different oral language assessment tools provide information about early literacy development?

Assessing aspects of oral language and reading development

Teachers and the university researcher assessed the oral language vocabulary, phonological awareness and book levels of 23 children in the first year of school using the Peabody Picture Vocabulary Test (Dunn & Dunn, 2007); the school designed Phonological Awareness Screening Tool and reading accuracy on a set of levelled books (Pitcher & Fang, 2007). The data collection on children’s oral language syntax using the Record of Oral Language (Clay et al., 2007) was reviewed but not undertaken because the researchers decided the complex embedded syntactic structures represented written language syntax.

Peabody Picture Vocabulary Test. In this test of children’s receptive vocabulary, the children point to one of four pictures on a page after the researcher says the target vocabulary word. For example, the pictures may consist of a red, yellow, blue and grey circle, and the researcher says the word ‘red’ and the child should point to the red
circle. Words were presented in 12-word sets. A ceiling was reached when eight or more items were missed in a 12-item set. This was a standardised test with a national US norming sample.

Phonological Awareness Screening Tool. The school Phonological Awareness Screening Tool was auditory and involved the children listening and responding to the teacher’s instructions. It covered phonological awareness skills, including segmenting sentences into words, rhyming words, blending syllables, reproducing a sound sequence, identifying the first sound, blending sounds, producing multisyllabic words, repairing sentences (silly sentences), matching beginning sounds, isolating the end sound and matching the end sound. A pre-test was administered early in the school year, and a post-test was administered after students had been in the programme for 15 weeks.

Reading Book Levels was used as an assessment of children’s early reading development where the child reads aloud a levelled text within a gradient of levels from 1 to 24 based on Reading Recovery (Clay, 1993; Pitcher & Fang, 2007). The child’s reading accuracy of 90–95% on a particular book level meant that book level was assigned as an assessment of reading accuracy. For example, if a child reads aloud a Level 10 book at 90–95% accuracy, the child received a book level score of 10.

Play-based programme for oral language intervention
After analysing the data from the assessment procedures, the teachers decided that a play-based programme would be a developmentally appropriate and an intrinsically motivating approach that would allow children to experiment with oral language. Play-based activities also involved sustained symbolic thinking, use of narrative and a range of other vital pre-literate skills (Dickinson, Darrow, & Tinubu, 2008). It was thought that the use of language in context in addition to the use of authentic and relevant picture books would lead to children adapting language to the situation and allow for the development of vocabulary in rich social contexts. Oral language development in social context rather than isolated vocabulary drills was expected to result in robust vocabulary learning.

Developing the play-based programme
The teachers created 15 themed play boxes with sets of levelled questions for teachers/adults to use to stimulate oral language. Each box contained both fiction and non-fiction books based around each theme together with materials/resources related to the theme. Oral language development was facilitated through structured and pretend play-based scenarios, levels of questioning to extend oral language and story-reading related to the play scenarios. The teachers organised a combination of pretend play and organised play activities in the belief that pretend play is of particular importance to the development of higher-order skills, linguistic development and academic success. There were four junior primary classes participating in the programme, and the students were in mixed groups according to age/grade/oral language skills.

The use of narrative was encouraged in each play session with adults assisting students to formulate stories based around their play experiences. The adults worked with students to use the narrative genre framework to formulate characters, set complications, events, resolutions and endings and to make predictions about what would
happen next. This essentially built on children’s oral language skills, presenting them with different syntactic structures to everyday oral language and worked to scaffold children’s learning for writing. The teachers recorded the play sessions via photographs of the students’ stories, and then students recorded their narratives using Photo Story software.

The play programme was modified and improved as it went along. Based on the oral language assessment data, the teachers decided to include more activities which would develop listening skills, promote auditory memory, expand conceptual knowledge and vocabulary, plus teach phonological awareness and grammar. The teachers then added relevant resources such as language games and activities.

**Data analysis and discussion**

The data from the assessments of oral language and reading were collated and analysed after the play programme had been in operation for several months (Hill & Launder, 2010). It was predicted that there would be a strong relationship between the children’s oral language and reading accuracy. This was not the case. The raw data on oral language from the *Peabody Picture Vocabulary Test* and the *Phonological Awareness Screening Tool*, when compared to the children’s reading as measured by *Reading Book Levels*, were puzzling. There was not a neat connection between children’s oral language and reading level, and further statistical analysis was undertaken to look for patterns or correlations.

The statistical analysis of the relationship between these three components of language and literacy: (1) receptive oral vocabulary, (2) phonological awareness, and (3) book levels of reading accuracy revealed a very strong relationship between reading and phonological awareness. On the other hand, the relationship between receptive oral language vocabulary and the level of reading was not significant.

There were three groups of children identified. First, some children scored low on receptive oral language vocabulary and scored high on reading. The children who fitted this pattern were children with English as an additional language who spoke a dialect of English or Hindi at home. Second, another group of children scored high on receptive oral vocabulary and low on reading, and in this group the researchers had expected that children with a high oral language vocabulary would have been more advanced with reading. Third, another group scored low on both oral language vocabulary and reading. The links between oral language and literacy demanded further analysis.

**High reading – low oral language vocabulary**

The children who scored high on reading were children with English as an additional language who spoke Hindi at home. An example is a boy named Dharvil, from India who had been at school for four months, was aged 5.9 years and had an oral vocabulary score of 4.3 years and was reading at book level 10. He had a phonological awareness score of 51/55.

The parents of this group of children spent a great deal of time on homework which included drill and practice of reading high-frequency words and teaching the sounds and letters of the English language. The children knew the alphabet letter names before they began school and scored high on the spoken language *Phonological Awareness Screening Tool* developed by the school. The views and practices of this
particular Asian Indian culture meant that the children typically waited for directions, valued the views of teachers and were familiar with homework where they practised learning the sounds and letters of alphabet and spent a great deal of time reading and writing at home (Joshi, 2005). The parents of the children asked why the children’s bags were so light to carry home from school as they expected the children to bring home a school bag of textbooks for homework. The teachers at the school commented that they favoured inquiry-based learning that fostered creativity, problem-solving and innovation and not rote learning. The teachers’ views echoed Helman and Burns (2008) who write that proficient readers need not only decode, but also need to understand what they are reading.

**High oral language vocabulary – low reading**

Some children in the study had relatively high vocabulary scores and much lower reading scores. An example is a girl named Linda, aged 5.5 years, who spoke English at home and had been at school for four months. Her oral vocabulary score was 7.8 years and she was reading at book level 1. Her phonological awareness, score was 41/55. The children in this group scored average to high on phonological awareness but they were not yet moving ahead with reading. Teachers commented that many of the parents were highly literate high-income earners who made sure there were books at home; they read aloud to the children and spent a lot of time providing rich language experiences, for example, trips, outings and holidays. To the teachers, it appeared that this group of children were not attending to the written language symbols and the teachers commented that these children often catch up in time and bring a great deal of background knowledge to their reading.

**Low oral language vocabulary – low reading**

The children who scored low on vocabulary and low on reading also scored low on phonological awareness. An example is Penny, an Australian child, who was aged 6.0 years, scored 3.9 years on vocabulary and was reading at Level 1 with a phonological awareness score of 22/55. This group of children included children from low-income families, children who were refugees from Africa and a large proportion of Aboriginal children. There were some gaps in the data collected due to the low school attendance rates of the children.

The teachers commented that most of the children in this group did not have the parental support at home in the form of book-reading activities. They also pointed out that the children who scored low on phonological awareness and reading often could not achieve the more difficult tasks to do with segmenting words into sounds, for example, ‘What sounds can you hear in the word “cat”?’ where the correct response would be ‘/c/ /a/ /t/’. These children also had difficulties with blending words, for example, ‘Can you tell me what this word is /m/ /a/ /t/’, where the correct answer would be ‘mat’.

**Disconnections between oral language and learning to read**

This small study of a group of 23 children beginning school revealed that there was not a neat hierarchical step-by-step process from oral language to early reading for many children. The study raises many questions. How is it that children with low
scores on oral language receptive vocabulary can be relatively advanced readers in the first year of school? Why are children who have high oral language scores not also advanced readers? Why are some children low on all counts of oral language and reading? There may be many explanations for this disconnection.

One explanation is that oral language differs in important ways from written language. Oral and written languages have differences in vocabulary, syntax and the mechanics of representation (Purcell-Gates, 2001), and oral and written languages have different purposes, functions, audiences and genre conventions (Halliday & Hasan, 1985). The vocabulary, syntax and mechanics of representation in oral language and written language will now be contrasted.

In oral language, meanings can be expressed through gesture, facial expressions and intonations. However, in written language, meaning must be accomplished through the use of explicit language and written language formalities such as the grammatical use of the ‘subject’ and the ‘object’ within a sentence. In oral language, meaning can be communicated with a sentence fragment such as ‘Sit over there’ with a gesture. In the written language, in the sentence ‘Tom sat on the chair’, the subject ‘Tom’ as well as the object ‘chair’ are identified. Purcell-Gates (2001) explains that oral language can have **exophoric** external references to meanings outside of the text, but written language must have **endophoric** or within-text references.

Regarding vocabulary there are more rare words in written language than spoken language. In an analysis of a range of spoken and written texts, Hayes and Ahrens (1988) revealed the amount of rare words used in everyday speech to be 17.3 in 1000 words, whereas in children’s books there were 30.9 rare words per 1000 words which is nearly double the amount in everyday speech. It is probable that children who experience being read to before school will be exposed to more rare words and increase their vocabulary more so than children who do not experience shared book reading at home. Regarding the issue of whether oral language is mapped to written language, it is more likely that written language read aloud provides models of syntax and vocabulary which then becomes used in children’s oral language.

The syntax of written language is different from oral language. The syntax of written language contains more embedded clauses. For example, the sentence ‘The cat from next door was chasing a bird’ is from the Record of Oral Language (Clay et al., 2007). In this procedure for understanding children’s use of oral language, the child listens to the spoken sentence and repeats it. However, this assessment procedure uses complex sentences more similar to written language syntax than the syntax of everyday spoken language.

Written language contains letters to represent sounds, punctuation and various font styles to represent intonation, stress and pitch. In written language, divisions between sections or new ideas are represented with headings, paragraphs and words to show the sequence of ideas, for example, first, second, last and summary. Written language is crafted, more static and more lexically dense than spoken language (Halliday, 1985).

**Discussion**

The study presented the view that written and oral languages are composed of different features and both are important. Spoken language does not provide a neat, sequential base which can be easily mapped to written language. Oral language is very important to beginning reading as the teacher’s and child’s talk and shared meanings
about how written text works are pivotal in learning to read. The process of learning to read is not simply a natural process that builds sequentially onto existing oral language – it is more like learning a new second language or a secondary discourse for all children (Gee, 1996).

The idea that oral language has different features from written language is very important for children who are dependent on school for learning how to read. Many children who grow up exposed to nonstandard forms of English are often impoverished and from minority groups. If educators tie children’s home oral language to success in school with written language, this implies that whole groups of children and home environments need to change. Viewing learning to read the same as learning a secondary discourse for all children enables teachers to introduce a wide range of written language forms to explore how written language works. The study also raised a number of questions about ecological validity of assessment procedures used for different aspects of oral language. Snow and Van Hemel (2008) suggest that narrowly based standardised English tests may seriously under-represent the children’s language capacities.

While this study did not find a neat relationship between oral language vocabulary and emergent reading, there was, however, a strong relationship between reading and phonological awareness. It is possible that the relationship between phonological awareness and reading is a ‘chicken and an egg’ argument as learning to read influences phonological development and vice versa. Learning to read and write works hand in hand with phonology as both inform and interact with each other. Questions remain about why it is that some children when assessed have the foundations in place for reading, such as high vocabulary and high phonological awareness, yet have relatively low levels of reading. It appears that for some children the components for early reading are in place, but they do not neatly and tidily lead to reading. As Genishi and Dyson (2009) write, children’s developmental timelines vary widely within and across individual children. ‘Like anything related to language and literacy, assessment timelines for individual children do not follow a straight line’ (Genishi & Dyson, 2009, p. 136).

Finally, more research is needed on school-based interventions like the socially motivating play-based programme as discussed here. The play-based programme provided opportunities for children to understand that language, whether written, spoken, visual or multimodal, is an object which can be explored and changed to suit a particular situation and context. For example, in dramatic play children often take on the roles of talking like a baby, talking like a teacher or being a wild monster in a far-away place. Once children see that language itself can be explored and this idea is taken on board, then all kinds of language can be investigated and language itself can be treated as an ‘object of contemplation’, not just a tool for communication. Interestingly, perhaps the children who speak several languages may already view language as ‘an object of contemplation’; however, this also may be a topic for further research.

Ecologically valid assessments may be created within a play-based or curriculum-based learning environment where the various components of language and early literacy may be assessed in a meaningful context. For example, within the play-based programme the props and books could be used for assessing language and literacy. The front cover of a book used in the play boxes could be used to assess print awareness by asking the child to point to the title, various letters or words. For phonemic awareness, children could be asked to name the sounds or suggest a rhyming word (Thurman & McGrath, 2008). Further, ecologically valid assessment can take place in
the context of learning when teachers analyse children’s early reading using forms of miscue analysis or running records of books read by children. Using samples of children’s writing, teachers can assess children’s knowledge of content, genre, as well as letters, words and grammatical constructions. Rather than narrow fragmented high-stakes assessment consisting of one-minute tests of letter identification and quick assessment of reading fluency, the use of ecological valid assessment in literacy has the potential to provide meaningful information for accountability and to provide information for teaching.

Notes on contributor
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References


Hill, S., Comber, B., Louden, W., Rivaillard, J., & Reid, J. (2002). *100 children turn 10: A longitudinal study of literacy development from the year prior to school to the first four years of school*. Canberra: Department for Education, Employment, Training and Youth Affairs.


