

## READING READINESS TEST FOR KINDERGARTEN CHILDREN

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**Abstract.** Learning to read is an on-going developmental process and readiness is just a concept in the various stages of learning to read. Reading readiness is often referred as the earliest stage of informal reading skills that involve young children. It is the basic common traits which would help a child to begin his academic endeavour without much difficulties. To study the ability of cognitive aspect on reading, a reading readiness test in bahasa Melayu was developed. This test consists of six aspects, namely visual discrimination, phonological awareness, letter and letter-sound relationship, aural cloze with letter, sight words, and listening comprehension. This test was given to 130 kindergarten children randomly selected from six kindergartens to determine its psychometric stability. A test-retest analysis shows that the test has a fairly high reliability of more than 0.80, hence suggests its pragmatic utility. It is hoped that the test would enable kindergarten authority in identifying students who need special attention in their learning process, specifically in reading.

*Keywords:* Readiness; reading readiness; reading readiness test

**Abstrak.** Belajar membaca ialah suatu proses perkembangan yang berlaku secara berterusan dan kesediaan merupakan konsep yang wujud dalam pelbagai peringkat belajar membaca tersebut. Kesediaan membaca pula biasanya dikatakan sebagai peringkat paling awal dalam kemahiran membaca secara tidak formal yang membabitkan kanak-kanak. Kesediaan membaca melibatkan tret asas umum yang dapat membantu kanak-kanak memulakan alam akademiknya tanpa banyak menghadapi masalah. Sebagai usaha mengkaji kebolehan aspek kognitif dalam kemahiran membaca, ujian kesediaan membaca dalam bahasa Melayu telah dibangunkan. Ujian ini merangkumi enam aspek, iaitu diskriminasi visual, kesedaran fonologi, huruf dan hubungan huruf-bunyi, melengkapkan ayat berpandukan huruf, kata pandang-sebut, dan pemahaman lisan. Ujian ini telah diberikan kepada 130 orang kanak-kanak tadika yang dipilih secara rawak daripada enam buah tadika untuk menentukan kestabilan psikometrik ujian tersebut. Analisis uji-uji semula yang dijalankan menunjukkan bahawa ujian yang dibangunkan mempunyai kebolehpercayaan yang agak tinggi, iaitu lebih daripada 0.80, justeru menunjukkan kegunaan pragmatis ujian ini. Diharapkan ujian ini dapat membantu pihak tadika dalam mengenal pasti kanak-kanak yang memerlukan penumpuan khusus dalam proses pembelajaran merkea, terutamanya dalam aspek membaca.

*Kata kunci:* Kesediaan; kesediaan membaca; ujian kesediaan membaca

### 1.0 INTRODUCTION

The term 'readiness' for any kind of learning refers to the stage firstly, when the child can learn easily and without emotional strain, and secondly, when the child

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can learn profitably because efforts at teaching give gratifying results (Downing & Thackray, 1975). Readiness does not necessarily imply that a child achieves this stage only through maturation but also through having completed the prior learning. A child's readiness to participate in a new school learning experience, and to profit from his exposure to it depends on a few conditions. Firstly, it depends on the extent to which he has the information and skills basic to the new learning. Secondly, it depends on his level of intelligence and his possession of appropriate special abilities and attitudes. Thirdly, it depends on his desire to learn the new material (Horocks & Schoonover, 1968).

Learning to read is a continuous developmental process and readiness is a valid concept for many stages in it. It is pertinent that efficient and adequate reading skills play a vital role in subsequent learning (Mehrens & Lehmann, 1978). Downing (1975) described learning to read as recognition of the auditory and semantic significance of printed or written words. To learn to read, the young beginner must decode the print by translating it into the spoken form of the language and into its linguistic meaning.

A continuing concern of schools lies in the reading readiness of the children placed under their care. When children lack such readiness, it is recognized that they will either fail to learn at all or at best their learning will be slow (Downing & Thackray, 1975). Thus, the definition of reading readiness revolves around reading. Downing and Thackray (1975) defined reading readiness as the stage in development when, either through maturation or through previous learning, or both, the individual child can learn to read easily and profitably.

Psychologists often find a reading readiness test a useful tool in assessing a young child's capacity and potential to learn. Many instruments for measuring the educational development of young children have been published in the last five decades in developed countries (Anastasi & Urbina, 1997). Some of these instruments were designed principally to measure the outcomes of early childhood education and thus function as achievement tests. Others were presented as predictive instruments to assess the child's school readiness for Grade One (Year One) instruction.

Most authorities produced long lists of specific traits and influences that determine a child's readiness for reading. They grouped these traits and influences under a small number of broad headings. Harrison (1939) and Inglis (1949) named them physiological; intellectual and personal readiness; Smith (1950), Hildreth (1958) and Schonell (1961), used physiological readiness and intellectual readiness but subdivided personal readiness further, using such headings as social; emotional; experiential; linguistic and environmental readiness. Downing & Thackray (1975) recognized such factors under four headings, namely, physiological; environmental; emotional, motivational and personality; and intellectual factors. Wilson and Cleland (1985) identified the basic readiness areas of reading as language; auditory; visual; and orientation. Mehrens & Lehmann (1978) grouped behavioral traits pertaining to

reading readiness as motor skill; auditory discrimination; visual discrimination; vocabulary and memory. Briefly, factors which influence the child's readiness to participate in reading and the extent to which he will learn how to read can be divided into cognitive aspects and non-cognitive or affective aspects.

Reading readiness tests are generally administered upon school entrance or towards the end of kindergarten year. While they have much in common with intelligence tests for the primary grades, readiness tests place more emphasis on the abilities found to be important in learning to read. Among the specific functions frequently covered are visual and auditory discrimination, vocabulary, motor control, aural comprehension, vocabulary, quantitative concepts and general information. Some widely used readiness tests in United States include Metropolitan Readiness Test, Gates-MacGinitie Reading Tests, School Readiness Test, etc.

The field of education is in a state of flux and educational testing reflects it, both in the United States and around the world (Oakland and Hambleton, 1995). Many educational psychologists agree that there is a need to integrate assessment and instruction further and in such a way that these aspects of the educational enterprise complement each other better to the advantage of the learner (Gardner, 1982). In Malaysia where the medium of instruction is primarily Malay Language, there is yet any systematic assessment of our young children's reading readiness in this language. Consequently, the advantage of integrating assessment and instruction cannot be realized.

In this study, a systematic development of an instrument to assess reading readiness of our young children in Malay Language has been attempted. The main purpose of the current study is to develop a reading readiness test that is relevant to our culture and educational needs. Parallel to this attempt, the validity and reliability of the instrument are determined by a pilot test involving more than a hundred Malaysian kindergarten children.

## **2.0 METHOD AND PROCEDURES**

The primary aim of developing this instrument is to provide a systematic formal reading readiness test in bahasa Melayu for our kindergarten children prior to their entrance into Year One. The outcome of the test will enable the school authority and parents to formulate appropriate strategies to help those children whose performance in the test are below expectation.

## **3.0 RATIONALE AND OBJECTIVES OF SUB-TESTS**

There are altogether six sub-tests included in this instrument. These sub-tests were adapted from three updated standard readiness tests, such as Gates-MacGinitie Reading Tests, Fourth Edition (2000), Metropolitan Readiness Test, Sixth Edition (1995) and School Readiness Test (2000).

### 3.1 Visual Discrimination

Johnson (1984) indicated that visual pattern-recognition training in letter components does facilitate word identification for beginning readers. The ability to recognize a second occurrence of a letter or sequence of letters is fundamental in learning to identify letters or words in new contexts. A student who cannot recognize a letter or word when it occurs again cannot learn the regularities of writing on which reading depends (Gates-MacGenitie, 2000).

Durrell (1956) states that the minimum requirements in the visual discrimination of word elements appears to be the ability to match letters, He says:

‘If the child cannot tell letters apart it is futile for the teacher to teach him words. He cannot attach meaning and name to a word that he cannot recognize when he sees it, a few seconds later.’

Visual discrimination has similar goals in the readiness program, that is, to sharpen the child’s skill in noticing similarities and differences in printed letters, so that we don’t get reversals like *b* and *p* and *q*, etc. (Howards & Melvin, 1980).

Reading is a visual task; consequently, visual discrimination ability is a prerequisite for success. Visual discrimination is not one global ability but comprised of specific abilities. Dechant & Smith (1977) explained that in order to distinguish differences between visual stimuli, he must be able to note similarities and differences in the form of objects, pictures, geometric figures, and words.

### 3.2 Phonological Awareness and Aural Discrimination

The acquisition of reading skills normally involves applying knowledge of oral language to a written representation of that language. The learner slowly develops understandings about the relationships between oral and written language. Among these understandings, for example, writing conveys ideas expressible in speech and that letters and letter sequence represent phonemes and phoneme sequence (Adams, 1990). Johnson and Baumann (1984) also indicated that phonics or code approach to word identification produce word calling ability. They further suggested that early, reasonably intensive phonics instruction results in word-identification at the same time produces readers who are more proficient at word pronunciation.

### 3.3 Letter and Letter-Sound Relationship

The fact that one word is comprised of distinct but blended sounds is foreign to kindergartners – unless, of course, they have learned it at home or in nursery school. Yet it is a basic idea for understanding phonics. An understanding of the

concept “sound alike at the beginning: for instance can begin to develop without written language. To provide children with more practice and greater skill, a teacher might have them sort unlabelled pictures into categories of names that start with the same sound (using unlabeled pictures puts the focus on beginning sounds rather on beginning letters).

Some research findings had reported a fairly high correlation between letter-name knowledge at the start of First Grade and reading achievement at a later date (Durkin, 1978). Knowledge of letter-naming doesn't justify successful reading but knowing some is sufficiently helpful for instruction. Durkin (1978) suggested that letter-naming can sometimes be given in connection with visual discrimination.

In learning to read, children need auditory and visual perceptual skills such as discrimination, retention and recall of sounds and letters, sequential ordering of phonemes and graphemes, and the ability to interrelate one with the other (Frostig, 1967; Wepman, 1967; Rubin, 1991).

### **3.4 Aural Cloze with Letter**

A further practice accompanying auditory and visual discrimination and the abilities in recognising letters and letter-sound relationship, the child could use such skills to finish an incomplete sentence with a word (represented by picture) that starts with a given letter. Such spoken context with minimal graphophonic cues provides an easy way to help young children to decide what the context is about (Durkin, 1978). Aural cloze with letter thus measures the ability to identify a picture that begins with a given consonant sound and makes sense in a dictated sentence (Metropolitan Readiness Test, 1995).

### **3.5 Sight Words**

Accompanying the work in visual discrimination and phonological awareness is the development of sight words. Sight words are just words learned by memory and by visual recognition. They are words identifiable by the student without using phonic or structural analysis skills (Howards & Melvin, 1980). The number of sight words is not critical, and it varies with the student as to how many might be useful as a base for starting the process of generalizing certain phonic elements from these sight words. The purpose of starting with a stock of sight words is to provide the learner with something known automatically. This stock of known sight words as the core of words to develop the ability to generalize about initial consonants, media vowels, blends and diagraphs. Durkin (1978) suggested that words which are familiar and also of interest to the child will increase the learnability of a word. A related way of cataloguing words for beginners should emphasize the content words and not the function words (prepositions, conjunctions, articles, etc).

### **3.6 Story Comprehension**

Many children who are not yet reading are already familiar with the nature of stories and with the type of language used in them. Students who have this sense of story will be able to use that knowledge as they begin to learn to read (Gates-MacGenitie, 2000). Their sense of story will help them to anticipate and comprehend events and to construct an understanding of the characters in the stories they read. Familiarity with stories can also help beginning readers in their efforts to decode and recognize words.

Durkin (1978) has pointed out the advantages of comprehension of spoken language for young children. Intonation, stress, pitch, and juncture offer assistance. More help may come from non-linguistic signals that might be a smile or a frown from the speaker (teacher) or a raised eyebrow. The versatility of the reader—slow down, re-read or stop and think, offer further comprehension aids.

Children who do not understand stories that are read to them will typically not have these advantages in learning to read. It is therefore important to identify these students early so that appropriate actions can be taken to improve their shortcomings.

### **4.0 ITEM DEVELOPMENT, RELIABILITY AND VALIDITY**

The instrument to assess the reading readiness of our kindergarten children in Malay Language (KMP) is developed by adapting the three most widely used reading tests in United States, namely, Gates-MacGenitie Reading Tests, 4<sup>th</sup> Edition (2000), Metropolitan Readiness Test, Sixth Edition (1995) and School Readiness Test (2000).

Reliability and validity are vital characteristics of all measurements. Thus, the researchers have used some standard procedures to determine the reliability and validity of this test. To ensure the reliability of the instrument, the researchers have observed certain criteria suggested by Mehrens & Lehmann (1978), Shaughnessy & Zachmeister (1997), and Anastasi & Urbina (1997).

The instrument used comprised of 90 items covering six cognitive aspects of reading readiness. The difficulty of the test and of the individual items were carefully developed to cover a wide range of variability in the difficulty of items. The validity of the instrument was assessed through content validity, criterion-related validity and construct validity. The content validity which is particularly important for achievement test involved the systematic examination of the test content to determine whether it covers a representative sample of the behaviour domain to be measured (Anastasi & Urbina, 1997). The major domains to be tested were systematically analyzed to make certain that all major aspects of reading readiness are covered by the test items, and in the correct proportions. The preparation of the items were preceded by a thorough and systematic examination of the syllabus, textbooks,

readiness research, readiness tests, consultation with experienced senior kindergarten teachers and the psychologists in our team.

In attempting to determine the criterion-related validity, the researchers only select concurrent method in which two contrasted groups were used to see whether there is a significant difference in reading achievement of the two groups. As for construct validity, Shaughnessy & Zachmeister (1997) pointed that construct validity of a test can be made even more strongly when the test is shown to have discriminant validity. Hence, the discriminant validity of the test was assessed.

Two approaches were intended to measure the reliability of the test, namely the internal consistency and test-retest reliability. Reliability refers to the consistency of scores obtained by the same persons when reexamined with the same test on different occasions, or with different sets of equivalent items, or under other variable examining conditions (Anastasi, 1982).

The idea underlying internal consistency is that the various items on a test are measuring the same trait or ability. To find if the test is stable over time, the test-retest method was carried out by repeating the identical test on the identical group of samples on a second occasion. In testing young children, the period should be even shorter than for older persons, since at early ages progressive developmental changes are discernible over a period of a month or even less (Anastasi, 1982). Thus, in determining the length of the interval between tests on two occasions, an effort was made to keep the interval short, i.e. a three week interval.

In determining the reliability and validity of the instrument developed, the instrument was tested on 9 groups of kindergarten children comprising of 130 children randomly selected as samples. Samples were randomly drawn from the general student population and not the homogeneous group of honor students. All the kindergartens involved in the study are government-aided and run by the Ministry of Rural Development known as KEMAS.

Students were first given a Practice Booklet in the pre-assessment one to two days before the assessment. They learned to recognize the pictures used, to follow instructions, to follow across the page from left to right, to turn pages, to circle the correct answers, to change answers. They gained experience with a variety of formats and item types. Students were given as much help as was necessary to complete the first 5 items successfully, leaving another five to complete independently.

The actual assessment was carried out with the help of either the teacher or a technical aide. The assessment was carried out strictly according to the procedures clearly stated in the administration manual. Students were given enough time on more difficult items

#### **4.1 Results**

All the results of the assessment are hand-scored and tabulated accordingly to be analyzed by SPSS version 10.0.

## 4.2 Reliability

Data was computed to find the Cronbach Alpha of its reliability. The results are shown in Table 1 below.

**Table 1** Coefficient alpha of KMP

	<b>Test</b>
1. Visual discrimination	0.91
2. Phonological awareness	0.90
3. Letters and sound-letter correspondence	0.87
4. Aural cloze	0.80
5. Sight words	0.89
6. Listening Comprehension (story)	0.70
<b>Coefficient Alpha</b>	<b>0.83</b>

The table above showed the instrument has good reliability in terms of its internal consistency which is above .80 on the first five aspects, namely visual discrimination, phonological awareness, letters and sound-letter correspondence, aural cloze, and sight words. However, the last aspect of KMP showed a lower reliability, ie. 0.70. The reliability of the test scores by using test-retest method is 0.87.

## 4.3 Validity

Feedback from the expertise in the topical area and in psychological measurement has ensured the domain appropriateness and clarity of the items and administrative manual. This showed that the instrument has good content validity.

As shown in the table above, most of the correlations between sub-tests of reading readiness are around 0.5 and below. The low correlations between these sub-tests indicate that the different sub-tests were measuring different constructs. Thus there is evidence of discriminant validity of the various sub-tests concerned.

However, there are certain sub-tests which correlate highly, namely between letter and sound-letter correspondence and sight words (0.80); visual and aural cloze (0.79); sight words and listening comprehension (0.77). It is reasonable to expect high correlation between the various sub-tests mentioned above. This pattern of correlations conforms nicely to theoretical expectations in beginning reading. For example, if letter and sound-letter correspondence test measure the ability to letter-name knowledge, then students who score high on this test would be expected to get good scores on the sight words, and those who score low on the test would be expected to earn lower scores. Likewise, the high correlation between visual discrimination and aural cloze (0.79) and between sight words and listening comprehension (0.77) are expected.



**Table 2** Correlation between scores of each sub-test of reading readiness

<b>Aspect of Reading Readiness</b>	<b>Visual Discrimination</b>	<b>Phonological awareness</b>	<b>Letters and sound-letter correspondence</b>	<b>Aural cloze</b>	<b>Sight words</b>	<b>Listening Comprehension (story)</b>
Visual discrimination						
Phonological awareness	0.39*					
Letters and sound-letter correspondence	0.45*	0.50*				
Aural cloze	0.79*	0.27*	0.26*			
Sight words	0.48*	0.52*	0.80*	0.30*		
Listening Comprehension (story)	0.45*	0.55*	0.67*	0.35*	0.77*	

\* Correlation is significant at  $p < 0.05$

Another approach adopted to determine validity is the criterion-related validity of the instrument. This was done by comparing the mean scores of the two contrasted groups participated in the test (30% of the upper-scoring group and 30% of the lower-scoring group withdrawn from the samples) based on the ratings by their teachers. A *t*-test was used to determine whether there is a significant difference between mean scores of the two groups. The result showed that the mean score of the upper-scoring group is 84 whereas the mean score of the lower-scoring group is 60, bearing a difference of 24. This difference is significant at  $p < 0.05$ .

## 5.0 DISCUSSION

This study reports the results of the pilot test of KMP developed for Malaysian kindergarten children. The results of the assessment clearly revealed that the items were clear, flowed well and served the researchers purpose. Statistically, the overall reliability of .83 measured by coefficient alpha ensured the reliability of this instrument. The coefficient alpha for each aspect also yielded a high value. It was also found that this instrument has a high test-retest reliability of 0.87 which indicates its stability over time. In the case of validity, the instrument has shown evidence of concurrent as well as discriminant validity.

As a new instrument, KMP needs to undergo further tests before it can be accepted as a truly valid and reliable instrument to measure reading readiness of young children. Besides this, efforts to determine its predictive validity as well as to determine the norms throughout the country in future studies is highly commendable.

## 6.0 CONCLUSION

The instrument developed is fairly reliable to carry out assessment of reading readiness of Malaysian kindergarten children. However, to further improve the instrument's psychometric stability and pragmatic utility, kindergarten teachers are strongly recommended to use this instrument on their students. With their feedbacks, upgrading and modification could be carried out to achieve higher reliability and validity value.

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