TEST OF WRITING FOR CHILDREN IN KANNADA-TOWCK

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A DISSERTATION SUBMITTED AS PART FULFILLMENT OF M.SC. (SPEECH AND HEARING) TO THE UNIVERSITY OF MYSORE

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CERTIFICATE

This is to certify that the dissertation entitled : TEST OF WRITING FOR CHILDREN IN KANNADA-TOWCK is the bonafide work in part fulfilment for the degree of Master of Science (Speech and Hearing), of the student with Register No.M9223.

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CERTIFICATE

This is to certify that this dissertation entitled TEST OF WRITING FOR CHILDREN IN KANNADA-TOWCK has been prepared under my supervision and guidance.

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DECLARATION

This dissertation entitled TEST OF WRITING FOR CHILDREN IN KANNADA-TOWCK is the result of my own study under the guidance of Dr. P. Karanth, Professor and Head of the Department of Speech Pathology, All India Institute of Speech and Hearing, Mysore, and has not been submitted earlier at any University for any other Diploma or Degree.

Mysore-6 Date: MAY, 1994

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DEDICATED TO

MY PARENTS

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INTRODUCTION

"Nature has placed mankind under the governance of two sovereign masters pa:n and pleasure"

Bentham.

Man, being a social animal depends on communication for his survival. He uses language as a means of communication to interact with his fellow beings and his environment.

Language can be defined as a system of conventional spoken or written symbols by means of which human beings communicate.

Language in humans almost certainly began in prehistory as an auditory vocal channel of communication.

Written language, which does not have a longstanding history is an arbitrary superimposition systems of graphic symbols upon verbal language.

The acquisition and mastery of written language assumes mastery of the phonology, morphology, syntax and lexicon of its respective natural language. Competence in the oral language is an integral part of written language. In the ontogenesis of the child, writing comes after speech. Writing is an acquired accomplishment. In writing, the hand that speaks gives pleasure to the child, for whom it is a "discovery" and a means of representing something within himself. Writing develops in the child in accordance with the laws of overall psychophysiological development. Learning to write can follow a fairly smooth pattern through various normal stages, including the mastery of difficulties inherent in any learning process. It can, on the other hand, be impeded either by defective teaching conditions or inadequate methods or by the child's own problems.

The present day education depends primarily on communication through spoken or written language. Written language has become a requisite to practically all phases of education.

The increasing necessity for the mastery of academic skills for the achievement of an effective role in the present complex society is throwing into prominence the serious difficulties in learning experienced by a disturbingly large population of children.

Despite the significance of writing in the child's learning it has been given only limited attention. Tools for its measurement have been essentially lacking.

Therefore, the present study was undertaken to develop a tool for assessing the normal acquisition of writing in children.

REVIEW

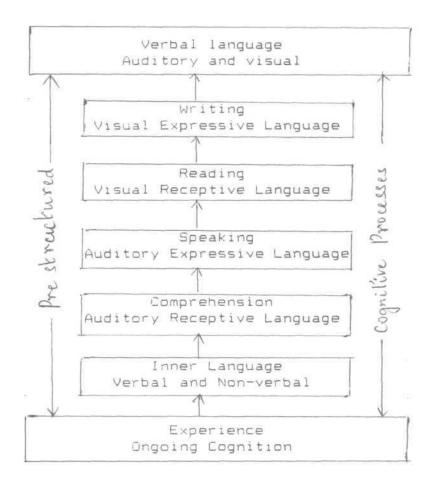
Language is the most momentous and at the same time the most mysterious product of human mind. In language we have the free accomplished use of symbolism and the record of articulate conceptual thinking (Langer, 1958, Cited in Lerner, 1976. There are numerous ways to view languages, but a common empirical construct considers language as consisting of:

1. Inner thought process (inner language)

- 2. Comprehension of spoken words Auditory language
- 3. Oral expression
- 4. Comprehension of written word 🕴 Visual language
- 5. Written expression

These systems are consistent with the developmental ontogeny and evolutionary phylogeny of language

Spoken language represents input (receptive language or decoding) and output (expressive language or encoding) for an auditory system of symbolic behaviour, whereas, read and written language represent analogous functions for a visual language system. At the same time, listening (comprehension of spoken words; and reading (comprehension of written words) represent the input (receptive language) and speaking and writing represent the output (expressive language). Therefore, there is a sequential relationship between the auditory and visual language forms, between spoken and read. Developmentally the auditory is first, with the visual form acquired later and superimposed on the auditory.



Developmental hierarchy for acquisition of verbal language. (Myklebust, 1965, Cited in Myklebust, 1970). Although the language functions are developed hierarchically, there is reciprocality among them. Hence, development requires that later developing modalities are superimposed upon earlier developing systems.

Consequently, reading and writing are most adequately developed if a functional base of oral comprehension and expression has been formed, together with an integrated foundation of inner language. There is a strong presumption that the deficit in written language is a manifestation of the inability to achieve normally in reading - one must read before he can write ie., input preceeds output.

Reading and writing when compared to speaking and listening are relatively unnatural and derived. All speakers-hearers cope with the structure of language below the level of awareness because of the normally functioning neurophysiology (Liberman et al. 1967, cited in Myklebust, 1971. contrast, the reader and writer must be able to In divide utterances into the constituent segments that are represented by the characters of the orthography.

Acquisition of Reading:

In order to learn to read, children must have some command over the language and the ability to discriminate the graphic symbols along with certain amount of linguistic sophistication (Liberman et al 1980, cited in Myklebust 1971) The acquisition of linguistic sophistication will depend on the language and the orthography. Linguistic sophistication is believed to consist of phonological maturity and linguistic awareness.

Phonological maturity:

Results of the psycholinguistic research (Berko, 1958; Moskowitz, 1973; Cited in Myklebust, 1971, suggest that young children are quite immature phonologically and therefore are not well equipped to take full advantage of the abstract aspects of alphabetic orthography like English. Evidence from the invented spellings of preschoolers show that young children are better phoneticians than phonologists (Read, 1975; Zifeak, 1977, cited in Myklebust, 1971). Though this stage is important to learn to read (learning to spell), it is not essential for the beginning reader.

Linguistic awareness:

Linguistic awareness is the explicit awareness of the segments that are represented by the orthography (Mattingly, 1972,cited in Myklebust,1971).Linguistic awareness varies with the nature of orthography. Entry into alphabetic orthography, which represents the encoded sublexical merits of speech, would be more demanding than entry into the logography, which represents the easily isolable word.

The sequence of stages that the child normally goes through in acquiring reading skills is commonly divided as:

- 1) development of reading readiness
- 2) the initial stage in learning how to read
- 3) rapid development of reading skills
- 4) the stage of wide reading and
- 5) refinement of reading skills (Harris, 1970, Cited in Lerner, 1976.
- Stage-1: This stage begins at birth and continues through the beginning stages of reading. It encompasses the development of language skills of listening and speaking, motor development, of auditory - visual discrimination, of concept and cognitive thinking

and of the ability to attend to and concentrate on activities (The role of kindergarten has traditionally been to build such readiness skills).

Stage-2: This stage start of the formal reading has traditionally occurred in the first grade; but it may also begin at kindergar ten, second grade or even later.

A variety of methods are used for the initial stage of reading.

Some children begin reading with the language experience approach; some with the first preprimer basal reading, some start with the phonics method and some begin with the new materials or methods like linguistics, programmed reading etc.

At this stage children begin to develop a sight vocabulary, start to associate sound with the visual symbol of the letter and learn to follow a line of print from left to right across page. Much of the reading here is oral.

- Stage-3: This phase normally seen in the second/third grades. It is an extension, refinement and amplification of the previous stage. The child now rapidly develops advanced word - recognition skills, builds а substantial sight vocabulary, becomes adept at using various types of context clues and establishes the techniques of phonic and structural analysis. The child developing normally has learned phonic generalizations and makes effective application of them by the end of the primary years. This stage lays the foundation for later reading development.
- Stage-4: The basic skills are improved and strengthened. Now the child can read for pleasure and voluntary reading reaches a peak in these years. This is the stage where children start reading story books, comics etc. This is normally seen in the intermediate grades and they need help in developing skills in reading factual materials.
- Stage-5: Reading development is not completed by the end of elementary school. During junior high school and senior high schools, students need continued guidance for effective reading growth. Here development of more advanced comprehension skills,

attainment CT study skills increase in reading rate and the achievement a flexibility in reading for different purposes are emphasized and secondery schools are responsitie for these.

Usualy it is at this point, when larger periods or concentrated reading are required, that many children begin to fail in reading. Reading problem at this stage is quits different from that of the problem seen dut to inability to learn to decode a graphic symbol at the beginning stage of reading.

Acquisition of writing in children:

Written language, the expressive facet or the visualverbal system is the last language form acquired by the child.

This expressive process provides information crucial to understanding success in receiving and coding the read word. If the read word is not received, there is no written language. If the child cannot read, he cannot write, it is an acquired accomplishment, once 3 ccertain level of intellectual, motor and affective development has been attained. But it is restricted by the context in which it takes place, the graphic figuration and the rules of spelling governing transcription of the language. Writing can become effective only by learning. Writing is praxia and language. It only becomes possible when a certain level of motor control has been attained, a fine coordination of movements in space.

Prewriting skills

Motor, psychomotor and praxic organization in writing.

For the skilled handling of the writing tool, anatomicophysiological maturation is very important.

To achieve writing the hand must be capable of fine prehension; it must adopt a specific position, which must be maintained with some force for a fairly extended period of time. Various synergics and coordinations must be put into operation to perform the graphic movement and the child improves them gradually with practice. The movements which are general to start with, have to become precise, the movements of the fingers must gain in refinement and be differentiated from the movements of wrist and arm, be capable of slight braking while the body learns to keep still to facilitate to complex distal movement. These elementary

motor conditions are achieved around the age of six, but at a minimum. The excercise and development of these motor and praxic abilities will enable the movements to become organized and gradually to become smooth, quick and automatic (Ajuriaguerra et al. 1964, Cited in Ajuriaguerra and Auzias, 1975;.

Position of the fingers on the tool varies with the tool used pencil, brush; convention and conscious imitation.

In children, the position changes with age, example, a pencil is first gripped by the whole hand before the age of 1. Prehension thereafter gradually becomes more distal, until the ends of the thumb and index finger are opposite one another near the point edge. After 6 years the flexion of fingers decreases.

Unusual, defective types of prehension are related to tension stemming from widely differing origins (fine tool, awkwardness, psychic tension about writing) or gnosopraxic difficulties, awareness difficulties, representation difficulties and may also be the mark of an ostentatious attitude intended to attract attention.

Speed of movements increase with age and depend on maturation factor. But other factors like daily learning and practise influence speed and contribute to the organization of graphic movements (Ajuriaguerra et al. 1968; Bang, 1959; Harris, 1960,cited in Ajuriaguerra & Auzias,1975). It can be impeded by (1). synkinetic and tonic elements (2) spelling difficulties and (3) specific emotional attitudes towards writing.

Tonic regulation governs the entire writing activity and therefore plays an essential role in handwriting. Tonicity brings about changes in posture, changes in support, stability of the hand and elasticity of the shoulder, wrist and fingers.

Writing takes place in a particular, sharply defined space along with conventions relating to the shape of the letters and directions to be used. The conventions vary from place to place.

Regardless of the method of graphic representation the hand has to delineate the minimum units in accordance with certain codified direction and in a given order; these units, juxtaposed or connected, are grouped in words.

Some of the writing systems follow horizontal progression of the line starting from the top left hand corner to the right hand corner in a horizontal line. Progression on the page become vertical (from top-bottom).

Letters are usually comprised of vertical, horizontal or curved strokes.

Gobineau and Perron (1954, cited in Ajuriaguerra & Auzias, 1975) in their study on the genesis of writing showed that the child first writes discontinuously; gradually he learns to connect several letters; later he transforms the calligraphy learned into a personal style of writing with new ligatures (connections between letters) adapted to it.

The child starts to scribble, between the ages of two ana three. This is primarily a straight forward motor impulse stimulated by the need to imitate (when he sees others drawing).

First strokes (continuous, then discontinuous, circular, curves, descending lines then lateral) are directly governed by motor maturation. Between three and four years, he tries to make the strokes more precise and vary them. He interprets the drawing after completing it.

Between four and six, drawing becomes richer and more precise. It is during this period that top-bottom becomes meaningful to him and also the left-right discrimination.

After figuratives signs, miniature sketchy curves, small enclosed figures, lines, wavy lines like lines of writing are observed. Before the age of six he can copy a sentence.

Luria (1929, cited in Scinto, 1986). In order to understand the child's writing he used a recall task in which children were read a number of sentences and asked to recall the sentences after presentation.

Based on this study he identified four stages in children's writing development:

- 1) Undifferentiated noninstrumental stage.
- 2) Undifferentiated ostensive sign use.
- Undifferentiated to differentiated transformation of sign stimulus to sign-symbol, and
- 4) Pictographic use of sign.

- Stage-1: Here the child produces a set of undifferentiated scrawls, arranged in some seeming order in paper. The child does not refer to these marks in the recall task and they produce no increase in the material recalled. amount of This is undifferentiated because the marks produced by the child are similar for each instance of production. Non-instrumental because the child shows no awareness of the functional use to which visible signs maybe put.
- Stage-2: This stage is similar in many ways to the first stage, in that the marks produced are not externally distinguishable from one another. Yet there is a subtle shift in awareness on the part of the child as to their relation to the sentences.

Luria comments that in this stage, the scribbings actually were more than just simple scrawls and the children were able to show without error and many times in succession which scribble signified which of the dictated sentence. He considers the emergence of this ostensive use of undifferentiated marks, the first form of writing in which the functional relation of the mark as an instrumental means is grasped. Stage-3: Here there is a double transformation.

- a) Surface differentiation of the mark
- b) Use of the mark as a true instrumental sign symbol.

This transformation is evoked by the need to attend to several factors in noting down the stimulus material. These factors are rhythm, quantity and contrast. In order to represent these factors what were once undifferentiated marks are transformed into a kind of primitive pictography having definite differentiated contours.

Stage-4: This stage is more truely pictographic. The child calls on his capacities for drawing to further and more fully differentiate his visible sign use in writing specific contents.

Developmental hirarchy of writing tasks:

- I. Scribbling
- II. Tracing
 - a) Connected figures or letters.
 - b) Disconnected letters of figures.

- III. Copying:
 - a) From a model
 - b) From memory
 - c) Symbolic and non-symbolic.
- IV. Completion tasks:
 - a) Figure
 - b) Word completion supply missing letters:
 - 1) multiple choice
 - 2) recall
 - c) Sentence completion supplying missing word.
- V. Writing from dictation:
 - a) Writing from letters as they are spoken
 - b) Writing words and sentences
 - c) Supply missing word
 - d) Supply missing sentence.

Here verbal understanding of the text transmitted orally by another and transcription into graphic symbols are essential.

VI. Propositional writing. Here it is necessary to set down in symbolic form material formulated by the internal language and a choice must be made from among forms of speech and graphic symbols. Chalfant, J.C., (1969) and Scheffelin, M.A., (Cited in Wallace and Laughlin, 1975).

DISORDERS OF WRITING

Written language because it is the last symbol system to be acquired, is sensitive to the deficiencies found in all learning disabilities. The errors of written language are reflections of other underlying deficiencies like perceptual distortions either visual or auditory, language confusion of either the primary auditory system or superimposed visual system or disturbances of other cognitive or motor processes. This uniqueness makes it potentially useful as a detector of deficits in learning.

The errors of written language may prove to be a key diagnostic tool in the differential separation of language and learning disorders.

For the adequate written expression, the underlying cognitive and linguistic structures must be intact. An intuitive sense of the structure of language is present in most children as they develop through typical exposure and interaction with their environments. Disorders of written language are usually studied in conjunction with other disorders like reading disability, aphasia, apraxia and other central nervous system disorders.

Written language disorders as a specific set of learning have not received the attention of professionals like other learning problems.

Written language disorders can occur due to central nervous system damage, faulty learning, unknown causes impairing the general development of language (retardation at any stage in the hierarchy of language development; visual problems, motor problems etc.

Written language disorder usually never occurs in isolation.

In children, learning disability is one of the most important causes of writing disorders. Children with learning disabilities, seem to ce deficient in the natural acquisition of the language rules.

Other factors related to written language disorders as listed by Myklebust (19&5) and Brueckner & Bond (1955.) (Cited in Wallace and McLaughlin, 1975) include:

- 1) Spoken language disturbances
- Auditory process problems (discrimination, memory, blending)
- 3) Visual process problems (discrimination, memory, sequencing
- Word analysis deficits, including problems with phonics and syllabication.
- 5) Speech articulation problems and other deviations
- 6) Instructional factors.

COMMON HANDWRITING ERRORS:

Difficulty with alphabet symbols:

- Does not rememoer how to write certain letters or numerals.
- 2) Distorts shapes of certain letters or numerals.
- 3) Overall writing effort is awkward, uneven.
- Has difficulty transferring from manuscript to cursive style.
- 5) Continues to print manuscript style long after introduction to cursive style.
- 6) Fragments certain letter/numeral forms
- 7) Writing resembles bird scratching; is illegible.
- 8) Has difficulty distinguishing between capital and lower case letter forms
- 9) Mixes capital and lower case forms.

Confusion with directionality:

- 1) Writes certain letters, numerals or words in mirror image.
- Tends to write on mirror side of vertical midline when moving to next column
- Marks from bottom to top when forming certain letters or numerals.
- 4) Uses backward motions when forming loops in certain letters/numerals.
- 5) Erases or overprints habitually to change directions of certain letters or numerals.
- 6) Writing tends to slant up, down or to wobole up and down.

Difficulty in copying simple shapes:

- 1) Distorts simple snapes
- 2) Fails to close corners
- 3) Tends to draw "ears" where lines meet or change directions
- 4) Has difficulty producing single designs from memory.
- 5) Work deteriorates toward end of writing exercise.
- 6) Has difficulty staying on liness when tracing.

Jordon, D.R., '1973) (Cited in Wallace and McLaughlin, 1975).

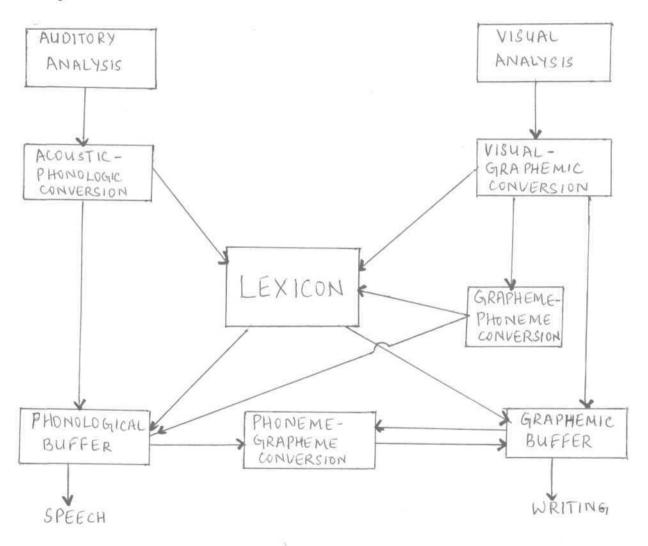
Usually in adults agraphia, dysgraphia are seen, not as isolated disorders but in association with other adult disorders, like aphasia, apraxia, Parkinson's disease,Chorea etc.

MODELS OF WRITING

A schematic model of the speech/writing production system.

Newcombe and Marshall (1980). (Cited in Nolan and Caramazza, 1983.

Fig.



In this model in the Graphemic buffer the orthographic information is held for written output. It receives input Visual system via the visual- orthographic from the conversion process, permitting transcription from print to script or from one case to another of visually presented words or nonwords and or from the auditory system via a phonologic-graphemic conversion process thus allowing dictating non-words to be written. The Phonological Buffer receives input from the Auditory system via an acousticphonologic conversion process, for repetition without lexical mediation and or from the Visual system via the graphemephoneme conversion process, for oral reading of non-words.

In addition, each buffer can receive input from the lexicon, for the spontaneous production of oral and written language. Whenever there is an output from the lexicon to the Graphemic Buffer, there is also an output to the Response buffer from the lexicon. Thus, graphemic and phonemic representations for words will be available simultaneously.

There is a communication system between the two buffers that permits the information in the Phonological Buffer to be translated into a graphemic code and passed on to the Graphemic Buffer. Therefore, since the information in the Phonological Buffer can be rehearsed and held for a longer

period of time, this information can "refresh" the Graphemic Buffer.

The Graphemic Buffer is subject to decay of information unless the representations stored in the buffer are periodically refreshed .

The vagarious of English orthography prohibit a direct phoneme to grapheme translation process from deriving the correct spellings for many English words.

Example: Sloboda (1980) Cited in Nolan and Caramazza, 1983; classified English words as having either transparent or opaque spelling.

Transparent words are words for which a phoneme grapheme conversion process could derive the correct spelling (Eg. rob;. Opaque words could be spelled in several different ways (eg."fake" -> faik, phake, fayk etc).

The phoneme-grapheme conversion process, therefore, must have access to graphemic information which can place constraints on its alternatives. When it attempts to translate sounds to grapheme, the phoneme grapheme conversion system is faced with several alternatives. Therefore it has to consult the information in the Graphemic Buffer to determine which alternative is appropriate. When non-words are written to dictation, however, the Graphemic Buffer will not receive information from either the lexicon or the visual system, and the phoneme grapheme conversion system will be free to select any of the alternative grapheme sequences which can represent the sounds of the non-words. Nolan and Caramazza (1983) reported a case of pure dysgraphia and analysed the errors based on this model.

Spelling errors may result from the rapid decay of information from the Graphemic Buffer. Lexical disruption is responsible for deep dyslexic reading. The graphemic representation for the intended word cannot be accessed and semantic errors and functor substitutions are produced. In the Graphemic Buffer information some cases, is lost completely, leading to omissions and gap errors.

Graphemic information can also be retrieved from the lexicon for writing words to dictation. For non-word to be written to dictation, the only means of deriving a graphemic representation for non-word is phoneme grapheme conversion. If this is damaged then writing non-words to dictation is not possible. Decay of information from the Graphemic Buffer can also result in spelling errors in writing to dictation and written naming. Direct copying will be intact because Graphemic Buffer can be constantly refreshed via the visual graphemic conversion system.

They concluded that the spelling errors produced by their patient in written naming. Writing to dictation and copying from memory are due to impairment of phoneme grapheme conversion. They opined that the writing ability of other deep dyslexic patients should be investigated to determine whether this inability results from impairment of a system which is specialized for phoneme-grapheme conversion or from impairment of an intermodality conversion system which is responsible for both grapheme-phoneme conversion and phonemegrapheme conversion.

ASSESSMENT OF WRITING

Assessment is important in knowing any aspect of a behaviour, normal or abnormal. It involves testing and measurements.

Generally, assessment instruments are used for several reasons. Some of them are listed below:

- 1. Screening.
- 2. Gaining meaningful understanding of a patient's problem.
- 3. Classification and assignment of the patient to a classic category of disorder.
- 4. Determination of an appropriate type of remediation.
- 5. Predicting outcome.
- 6. Monitoring recovery.
- 7. Assistance of communication with other professional.

The most accessible arc useful material for assessment is a student's own writing. The written production is especially valuable because in the process of transferring thoughts to words the student learns everything necessary to become a proficient reacer and a good writer. The student with deficiencies in both areas welcomes diagnostic teaching. It gives him concrete evidence that improvement is possible, if his mistakes are analyzed one at a time, then corrected with the help of a teacher until he is able to function independently in monitoring his own work.

The complexity of the writing task makes evaluation of the written product difficult.

Eva S. Weiner (1980) gave an individualized assessment instrument, Diagnostic Evaluation of Writing Skills (DEWS;. Assessment is done in the following categories, graphic, orthographic, phonologic, syntactic, semantic and selfmonitoring. She has given 41 criteria for assessment under the above six headings.

Graphic category: Contain criteria concerned with the visual aspects of writing.

Illegible hand writing, messy paper may suggest particular difficulties, the child has in writing.

- 1. Excessive pencil pressure marks
- 2. Letter formation ambiguities
- 3. Capital and power case letter mixture
- 4. Size or spacing irregularities
- 5. Off-line writing
- 6. Margin slant or crowding.

Orthographic category contains criteria relevant to spelling ability.

Eg. 1. Sequencing of letters,

2. Prefix and suffix generalizations

Phonologic category: Here the criteria focus on the oral and written sound components of language.

Eg. 1. Letter/syllable omissions,

2. Bizarre nonphonetic spellings.

Syntactic category: Focuses on specific grammatical problems identified in the context of student writing.

Eg. 1. Incomplete sentences,

2. Word order omission.

Semantic category: Is primarily meaning oriented. Because the skills needed for conveying meaning in writing are inextricably bound to the skills necessary for extracting meaning from reading, the relationship of reading and writing assumes extraordinary significance.

Eg. 1. Logical sequencing,

2. Transitions.

Self-monitoring category: encompasses all of the writing skills evaluated in the preceeding categories.

Eg. 1) Self correction

2) Improvement through revision.

Criteria for assessment:

The criteria for assessment include most of the common types of errors encountered with learning disabled students. Elements may be added or deleted based on individual experience. The order of presentation is not suggestive of possible frequency or importance of the errors.

This study was aimed because it is the first of its kind in Indian languages.

METHODOLOGY

Aim:

The current study was undertaken to develop a tool to assess the acquisition of writing in children.

Subjects:

50 normal children aged between 3-8 years attending Kannada medium schools participated in this study. The subjects were grouped into 5 groups based on age, 3-4, 4-5, 5-6, 6-7, and 7-8 years. Each group consisted of 10 subjects, 5 males and 5 females.

Materials:

The test has 8 sections. Sections I-V have 2 tasks, copying and dictation.

The sections are:

Section-I : Simple alphabets II : Syllabary III : Words IV : Non-words
V : Sentences
VI : Sentence completion (Supplying missing word'
VII : Questions and Answers.
VIII : Text (a) Picture description

(b) Spontaneous writing.

Section I-IV:

Materials were selected f--om the NCERT project by karanth and Prakash 'A developmental investigations of onset progress and stages of literacy acquisition - Its implications fo^ Instructional process. Funded by NCERT, New Delhi).

Section-I:

50 vowels and simple vowel-consonant combinations were selected. The section had 10 sets and each set have 5 items (V & CV). Five sets were used for copying tasks and the remaining five for dictation. This section tried to assess the abilities of the subjects to copy and write to dictation tne selected V and CV combinations. Instructions: For copying, "You will be given a booklet. It has alphabets. You have to copy the alphabets as they are in the space provided".

For dictation: "Now, I will tell you some alphabets. You have to listen to them carefully and then write them down".

Scoring: Maximum score for this section was 50, 25 for copying and 25 for dictation. Correctly copied and written alphabets were given a score of 1. One half of the score was deleted for error.

Section-II: Simple and complex syllabary (CCV and CCCV)

60 items were group into 12 sets. Each set having 5 items. Six sets were for copying and six for dictation.

Instructions were similar to section-I with appropriate modifications.

Maximum score was 60. 30 were copy and 30 for dictation.

Section-III:

50 words were grouped into 10 sets. Each set having 5 words. Five sets were for copying and five for dictation.

Instructions: Similar as the above.

Scoring: Total score was 60. 30 for copy, 30 for dictation. For first 4 sets in both the tasks got a total score of 20 and the remaining for fifth set. Eachcorrect word got a score of 1 in the first four section in the fifth section a correct word got a score of 2.

Section-IV:

50 non-words were derived by reversing/jumpling the words of the previous sections. Five sets were for copying and five sets for dictation.

Instructions: Similar to the above section. Scoring: Similar to the above section.

Section-V Consisted of sentences which were chosen from the text books of the Grades I-III. These sentences were arranged in increasing order of difficulty. Simple sentence had 2 words and the most complex sentence had 5 words. 5 sentences were choosen for copying and 5 sentences were choosen for dictation.

The subjects were instructed as in the previous sections but with appropriate modifications.

Scoring: The total score assigned to this section was 20.

First sentence got a score of - 2 Second sentence got a score of - 3 Third sentence got a score of - 4 Fourth sentence got a score of - 5 Fifth sentence got a score of 6.

One half of the score was deleted for error while answering (copying or writing to dictation).

Section-VI Sentence completion. 5 sentences were selected
from the kannada text books of grades I to III,

The crucial word in each sentence was deleted and provided in the bracket below the sentence along with distractors. The subject had to choose appropriate words from the brackets and fill in the blanks provided in all the sentences.

Instruction: Here, there are 5 sentences. In each of the 5 sentences, one word is missing. The answer is given in the bracket below, where one is correct and the other 3 are wrong. You have choose the right word and fill the blank. In this way you have to fill up all the 5 blanks in the 5 sentences.

Scoring: Maximum score was 20. Each filled sentence was assigned a score of 4. Even though right wore was chosen and if it was not written correctly then one half of the score was reduced.

Section VII Questions and answers: The story titled "The Elephant" was selected from the project by Rama(1980) and 5 questions too were selected from the same.

The subjects had to read the story and then answer the questions given which were cased on the story.

Instruction: "I will give a story to read. You have to read it carefully. After reading the story, you have to answer the 5 questions. You can answer the questions in your own, words or you can see the story and answer. Scoring : For each question was divided into content, syntactic accuracy, number of words and syntactic complexity. Content and syntactic accuracy in each answer would get a score of 2 each. Number of words depended on question and also the individual subject. Syntactic complexity was awarded a score of 2 that is if the subject nad answered the question using his own words. Total score in this section was 75.

Section-VIII Consisted of 2 subsections picture description and spontaneous writing.

Picture description: The picture was selected from the linguistic profile test developed by Karanth(1982).

Each subject had to describe the picture in written language.

Instruction: "Now I will show you a picture. You have to see the picture and then write in sentences about what you have seen".

spontaneous writing: The topic "My nouse " was chosen. The child had to write 5 sentences regarding the topic.

Instructions: "You have to writs 5 sentences about this topic. You can write whatever you feel about the topic".

Scoring: For the two subsections were divided into content, syntactic accuracy, number of words and syntactic complexity.

Content in each subsection was scored 10 each. Syntactic accuracy 10 each. Number of words depended on the subject. Syntactic complexity-5 each.

Syntactic complexity was rated as-

- 0 no response
- 1 one word answer
- 2 a phrases
- 3 a simple sentence with 3 words
- 4 a sentence with 4 words
- 5 if sentences were complete with a maximum of 5 words.

The test was administered in quiet environment individually. The copying task in all the sections were administered first and then the dictation task were administered.

RESULTS AND DISCUSSION

The present study aimed at developing a tool to assess the acquisition of writing in children.

The test was administered to 50 subjects and the scores of all the subjects in the 5 groups were averaged.

Table-1 shows the mean values obtained from all the 5 age groups for all the sections.

Table-1: Mean values of the subjects for all the sections.

Sections			Years	in age		
200010112		3 – 4	4-5	5-6	6-7	7-8
I. Alphabets						
Copying Dictation	25 25	1.2 0.34	24.15 11.65	24.15 14.50	24.85 17.75	25 18.75
II. Syllabary						
Copying Dictation	30 30	0.4 0	26.05 0.55	26.45 2.60	28.55 12.15	29.55 12.15
III. Words						
Copying Dictation	30 30	0.1 0	26.10 1.80	26.90 8.60	28.35 16.75	28.2 22.1
IV. Non-words						
Copying Dictation	30 30	0.1 0	25.5 1.50	27.7 7.05	27.80 13.65	28.1 20.8
V. Sentences						
Copying Dictation	20 20	0.1 0	8.65 1.0	18.20 4.80	19.1 10.55	19.5 15.45

VI. Sentence									
Completion 20	0	0	8.4	13.6	7.85				
VII. Question & Answer Content									
Syntactic accuracy	0	0	0	2	3.85				
Number of words	0	0	0	5.5	3.3				
Syntactic complexity	0	0	0	9.3	15.5				
VIII. Text	0	0	0	1.5	2.4				
Picture description									
С	0	0	0	1.3	3.4				
SA	0	0	0	1.15	2.8				
NoW	0	0	0	3.95	7.55				
С	0	0	0	0.7	2				
Spontaneous Writing									
С	0	0	0	1.5	1.4				
SA	0	0	0	i.2	1.3				
NoW	0	0	0	3.55	6				
C	0	0	0	0.9	0.7				

Table-1 indicates that in the copying tasks there is no significant difference between the age groups, 4-5 years, 5-6 years, 6-7 years and 7-8 years. The implication from this is that the copying of alphabets, simple and complex syllabary, words, non-words and sentences has been attained by the age of 4-5 years.

The mean for the youngest group ie. 3-4 years suggests that children at this age are still in the process of acquiring the copying skills.

The results also show slight increase in scores as age increases for the copying task o sections I-V. This is indicates that the copying task is mastered by 7-8 years of age.

The ability to write to dictation appears to begin at 4-5 years of age with the alphabets. Beginning with writing o gradually increases with age to incorporate the syllabary, words, non-words and sentences. The youngest age groups in this study, ie. 3-4 years could attempt writing alphabets but as the complexity increased they failed to continue the task. Children at this age are equipping themselves to acquire the ability to write to dictation.

Sections VI, VII, and VIII were not administered to the two youngest grcups, 3-4 years and 4-5 years. Because these tasks require the mastery of written language.

The mean values for section VI indicates that this skill, i.e. the ability to complete a sentence by choosing the appropriate word, from a group cf distractors begins at around 5-6 years when the child is in the I grade of school and continues to develop even at 7-8 years. The results of Table-1 can be thus summarized.

Except for copying, which is mastered fairly early the performance on all other tasks improve with age and grades in the subject population of this study.

Mastery of copying task at a fairly early age ie. 4-5 years can be attributed to the early training the children receive in LKG and also at home.

Copying tasks, therefore, would be more appropriate for pre-school children, ie. 3-4 years in order to know the emerging writing patterns in them.

Tne raw scores were subjected to ANOVA and Newman Keul's Comparison Report.

Table-2: Newman Keul's comparison report for copying task (Sections I-V) across the age.

F Ratio = 858.51

P = 0.00

In copying task, the youngest group (3-4 years' differs from all the other older groups. The next youngest group (4-5 years) also differs from the youngest (3-4 years) and the oldest group (7-8 years).

The 5-6 age group differs from the youngest (3-4 years; and the 2 older groups (6-7 and 7-8 years). But performs similarly with 4-5 years age group. Groups 6-7 years differed from the youngest group (3-4 years) arc middle group (5-6 years). The oldest grcup (7-3 years; differed from all younger groups except 6-7 years.

Therefore, it may be concluded that testing of copying skills in writing is essential for younger children (3-4 arc 4-5 years). However, it has no particular discriminatory value for the olds'- children.

Table-3: Newman Keul's comparison report for the dictation tasks section (I-V) across ages.

5	4	3	2	1	
5	_	_	S	S	S
4	_	_	S	S	S
3	S	S	_	S	S
2	S	S	S	-	-
1	S	S	S	-	-

FRatio = 28.1; P=0.00

In the dictation tasks, the 2 youngest groups (3-4 years) and 4-5 years) differed from the 3 older groups, 5-6 years, 6-7 years and 7-8 years.

The group 3 (5-6 years) differed from all the other groups.

Likewise the two older groups differed from the 3 younger groups.

The dictation tasks clearly discriminates the older groups from the younger groups. This skill starts at around 4-5 years and with increase in age incorporates syllabary words, non-words and sentences.

Compared to copying skills, the writing to dictation SKill is mastered later and has scope for improvement even after 7-6 years of age.

Table-4 : Newman Keul's comparison report for Section-VII Question and Answer.

	3	4	1		5		2		1	
3		_		_		_		S	S	
4		-		-		_		S	S	
5		-		-		-		S	S	
2		S	S			s		-	-	
1		S		S		S		-	-	
			=	4.	34;			=		_
F =	Rat	io					р		.0047	

The 3 youngest groups differ from the two oldest groups. So, it can be concluded that this skill begins at 6-7 years of age has scope to develop beyond 7-8 years of age, the upper age limit of this study.

This task is therefore appropriate for the two older groups, 6-7 and 7-8 years. The younger children must be exempted from this task.

Table-5: Newman Keul's comparison report for the picture description task.

	5		4	3		2	1	
5		_		_	-	2	5	S
4		-		-	-	2	3	S
3		-		-	-	2	3	S
2		S	S		-	-	-	-
1		S		S	-	-	-	-
F	=]	P=	0.	00				

Like the previous task, even in this task the three younger groups differ from the two older groups.

This still too begins developing at 6-7 years of age and continues developing even after 7-8 years of age.

Table-5: Newman Keul's comparison report for spontaneous writing.

				2	1
5	_	_	_	S	S
4	-	_	_	S	S
3	-	-	-	S	S
2	S	S	S	_	-
1	S	S	S	-	—

FRatio = 6.03; P = 0.0006

Section VII Questions and Answers. Children in age group 5-6 years did not attempt this task because they could not read and understand the story. The two older groups, 6-7 years and 7-3 years also faired poorly in this task.

The answers were scored based on content, syntactic accuracy, number of words and syntactic complexity. The two age groups scored maximum in the number of words aspect.

Scares indicate that the ability to answer questions based on a story begins at 6-7 years of age and continues to develop even after 7-3 years, the oldest age group in this study.

Section VIII, the text was divided like section VII into content, syntactic accuracy number of words and syntactic complexity.

Like the previous section, even in this section it was found that ability to describe pictures in written language and spontaneous writing on a given topic begins at 6-7 years of age and has scope for developing even beyond 7-8 years of age, the upper age limit in this study. Comparison report once again shows that the three younger groups 3-4 years; 4-5 years; and 5-6 years; differ significantly from the two older groups (6-7 years and 7-8 years). Even this skill like the previous 2 skills begins emerging at 6-7 years of age and has scope for further improvement above 7-8 years of the highest age group of this study.

The testing of these skills sentence completion, question and answers, picture description and spontaneous writing is more appropriate for children the age of 6-7 years.

SUMMARY AND CONCLUSION

The present study aimed at developing a tool to assess the acquisition of writing in children studying in Kannada medium schools. The test was administered individually. The results indicated that children at 3-4 years of age have acquired writing skills. Writing skills begin to emerge at this age with copying and gradually with increase in age with other skills, writing to dictation, sentence completion etc. are acquired. The study showed that writing is not fully developed ever at 7-8 years of age. It was also observed that practise, training and education could effect the writing.

Limitation:

The study had limited number of subjects.

Implications:

- The copying skills can be retained in the test battery for testing the younger children (3-4 years and 4-5 years).
- 2. This test can be tried on a large sample.

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APPENDIX

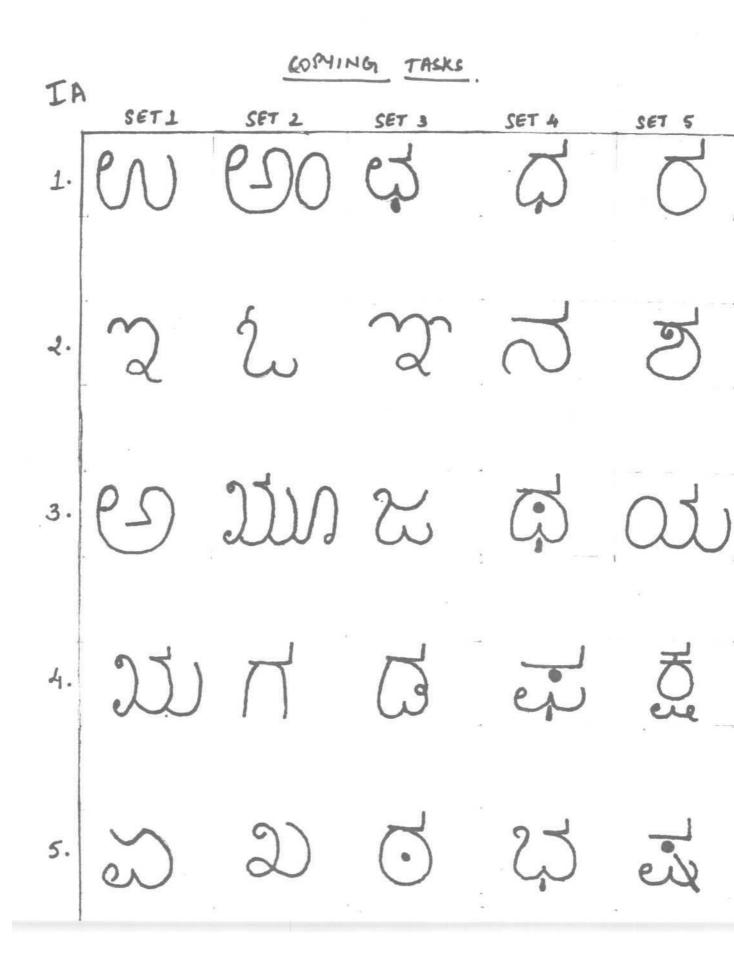
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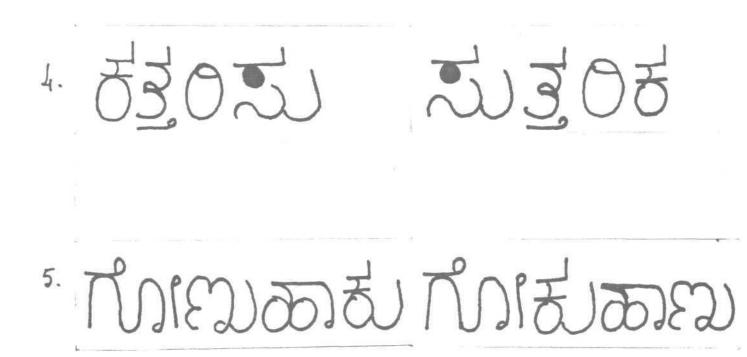
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4B.

రార దన. ఈగ రాజన సమయ. సూర్వను శిరువాగ బెళ్లకు ఫిర్షక్షిది. అమే మేల సజద పణ శృందిదవు. డింగణి ముళ్లగవరి ఈజ దథ సోరుకుణగుక్రిది.

5 SENTENCE COMPLETION.

VI

1· រីសឈ្នះ ______ លក្ខុំ ដុច្ច ដូច្រេះ ភ្នំ (ឃុំភភ័គ, ឃីខ្លីជា, សរ័ថ, ៨ភ្នំគ) 2. ರೋಗಿಗೆ _____ ಕುಡಿಸುವರು. (ಪಾಯಸ, ನೀರು, ಬೌಷ್ಣಧ, ಸಾರು) 3. ಉಪ್ಪನ್ನ ____ ದ ೫೦ನಾದ ತಮಾರಿಸುವರು (ಕೊಳ, ಬಾವಿ, ಮಳ, ಸಮುವ) 4. ಮೂವಿನ ಮರ _____ ಹಣ್ಣು ಕೋಡುತ್ತದೆ. (ಸೇಬನ, ಕ್ರಿಕ್ಲೆ, ಕ್ರಿತ್ರೆ, ನೂವಿನ) 5. ಭೂಮಿಯ ಮೇಲೆ ವಾಸಸುವ ಪಾಣೆಗಳಲ್ಲೆಲ್ಲ ____ ಟಿ೨ ಮೊದ್ದಮ. (いも, えし、 いろ、 まむ)

64 STORY (II) ಒಬ್ಬ ಮನುಷ್ಟನ ಬಿಕಿ ಒಂದು ಆನೆ ಇತ್ತು. ಅವನು ಅದಕ್ಕೆ ಸಾಕಷ್ಟು ಆಹಾರವನ್ನೇ ಕೊಡುತ್ತಿರಲಲ್ಲ. ಆದರೆ ಅದರಿಂದ ಬೇಕಾದಷ್ಟು ಕೆಲ್ಸ್ ಮೂಡಿಸಿಕೊಳ್ಳುತ್ತಿದ್ದನು. ಆನೆಗೆ ತುಂಬಾ ಕೋಪೆ ಬಂತು. ಒಮ್ಮೆ ತನ್ನ ಯಜಮನನನ್ನು ಕಾಲ ಕೆಳಗೆ ಹಾಕಿ ತುಂಬುತು. ಅವನು ಸತ್ತು ಹೊಡನು. ಅವನ ಹೆಂಡತಿ ಅಳತೊಡಗಿದಳು. ತನ್ನ ಮಕ್ಕಳನ್ನು ತೂಂದು ಆನೆಯ ಕಾಲಕೆಳೆಗೆ ಹಾಕ, "ಆನೆ! ಸಿಮೆ ತಂದೆಯನ್ನು ಕೊಂದೆ. ಈ ಮಕ್ಕಳನ್ನು ಕೊಲ್ಲ", ಎಂದು ಹೇಳದಳು. ಆನೆ ಮಕ್ಕಳಕ್ಷ ನೋಡಕು. ದೊಡ್ಡ ಮಗನ ಸುಕ್ತ ತನ ಸೊಂಡಿಲನ್ನು ಸುತ್ತಿತು. ಅವನನ್ನು ಮೇಲಕ್ಕೆತ್ತಿ ತನ್ನ ಕತ್ತಿನ ಮೇಲೆ ಕೊರಿಸಿ ಕೊಂಡಿತು. ಅಂದಿನಿಂದ ಅದು ಆ ಬಾಲಕ ಹೇಳದಂತೆ ನಡೆದುಕೊಳ್ ತೊಡೆಗಿತು. ಅವನಗಾಗ ಕೆಲ್ಲೆ ಮೊಡತೊಡೆಗಿತು.

ಪ್ರಕ್ರೆಗಳು. 1. ಆನೆ ಯಪಮಾನನ್ನು ಸಾಖಾಸಲು ಕಾರಣವೇನು? พรุ่อุ: 2. ಯಜಮಾನ ಸೆತ್ತಾಗ ಅವನ ಹೆಂಡತಿ ಎಸು ಮೂಡಿದ ಬೆ ? เงรีอ: 3. ಆನೆ ಮೂಡಿದ ತಪ್ಪು ಕೆಲಸವೇನು ? WID: 4. ಆನೆ ಯಜಮಾನನ ಮನೆಯವರಿಗೆ ಹೇಗೆ วีเช่อาณ รับ ?

(

5. ಆನೆ ರೆಎಡುಗನನ್ನು ಯಜಮಾನನೆಂದು ತಿಳಿದು ಕೊಂಡಿತು ಎಂದು ಹೇಗೆ ಹೇಳಬಹುದು?

