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ABSTRACT

In an attempt to describe the place of phonics in a word-attack program, five areas of word attack are discussed: sight recognition, the use of context clues, morphology (structural analysis), phonics, and dictionary use. Facility in the use of all of these, singly and in combination, is stated as being necessary for a person to be an independent reader. Next, 12 particularly useful grapheme-to-phoneme relationships which the author considers to require description in a phonics program are discussed: four related to consonant graphemes, five related to vowel graphemes, and three related to phonic syllabication. A brief description of the four components of most phonics lessons is also included: auditory discrimination, visual discrimination, blending, and contextual application. References are given. (Author/DE)

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Phonics in a Reading Program -- Place and Content[1]

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Introduction

Today almost everyone agrees that some type of phonic or alphabetic decoding approach is necessary in a complete word attack program. The purpose of this paper is two-fold: to explain the place occupied by phonics in a modern word attack program and to delineate phonic principles that should be taught in such a program, in line with modern research findings.

A brief discussion is also included concerning some objections to past and present phonics programs as well as a very brief discussion of phonics methodology.

Types of Word Attack Skills

Reading specialists commonly talk about five word attack, or word recognition, skills. In a hierarchal listing of these--starting with the one that is least time-consuming--are

1. sight recognition
2. context clues
3. morphology (structural analysis)

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[1]A paper read at the annual conference of the International Reading Association in Anaheim, California, May, 1970.

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4. phonics

5. dictionary use

Definitions of word attack skills

By sight recognition is meant the recognition of a word or phrase by a quick gestalt. Clues used are the distinctive shape of the word and/or some letters. The word, obviously, must have been seen at least once before in print, and attacked in some other way that time. A word recognized at sight may or may not have meaning for the reader.

The utilization of context clues and morphology (structural analysis) as word attack skills deals with meaning. Among the more common types of context clues are: real objects (a real object may be labeled - as a piñata, a blowfish, a tetrahedron, a daffodil); pictures (a picture of a piñata, a blowfish, a tetrahedron, a daffodil may be labeled); experiences (former or present observations may be a clue to a word in a sentence such as "The American flag is red, white and ____."); words, sentences or paragraphs themselves may supply the experiences necessary to get the meaning, though not the pronunciation, of a new word (e.g., Just before sunset the majestic mountains were a purplish-blue--the color an artist would call mauve ... or, A chill went up her spine--there was a scratching on the window screen. It was dark, and she was alone and afraid. What an eerie feeling she had.)[2]

[2]See also Dulin, 1969.

Morphology, as a word attack skill, deals with the recognition of meaningful parts, or morphemes, which compose words. Morphemes are the smallest meaning units of our language and may be free, as are words, or bound, as are prefixes, some roots, and suffixes. A reader using morphology (or structural analysis) may know the free English morpheme kind and the bound morpheme un-, as in unlike, unable, unnecessary. When he first meets unkind in his reading it should be a simple step for him to induce the meaning of that word. The same is true for a more advanced student who knows tele- from telephone, telegraph, teletype and -pathy from sympathy, apathy, and empathy to arrive at the meaning of telepathy.

Phonics is an altogether different type of word attack skill, for it deals with relationships between printed symbols and sounds, not meanings. Phonics will be of no help to the reader interested in getting meaning unless he orally knows the word being attacked. Researchers commonly talk about paired associates. It might be helpful to think of phonics as part of a triple associate skill. The printed symbol triggers the sound (paired level), and the sound triggers the meaning (triple associate level). For example, the reader sees the word cat; he responds orally /kat/; he remembers that to be the oral symbol for a fluffy four-legged animal with a tail--or for the woman who scratches and claws. Unless the triple associate relationship is present, utilizing phonic skills can be busywork.

Using a dictionary is often a last resort. If the reader cannot understand a word by using one of the above techniques, finding

it in a dictionary will help. However, such a task is time-consuming and probably ought to be reserved for the most difficult words.

Some criticisms considered

Some linguists criticize reading teachers for attempting to teach children to use what these linguists consider to be diametrically opposite types of word attack skills. They argue that children might be taught either sight recognition or phonics (or an alphabetic decoding system such as Bloomfield's or Fries') but not both. Note the following statement (Smith, 1968, p. 1): "It has not seemed to occur to most of these teachers and authors that, quite obviously, the phonics and whole-word approaches are polar opposites, and if one is correct the other must be wrong, and an 'eclectic' approach must mean that at least part of the time the teaching is based on faulty premises which can only increase the confusion of the learner."

It is difficult for reading experts to understand such criticism, for reading people have long felt that a flexible approach is desirable. Some words can be recognized at sight easily--those that are meaningful to the reader, that have distinctive shapes, and those that he has seen often in print. The independent reader must somehow attack others--including each word he is seeing in print for the first time.

Then why not just phonics and not sight at all? Because phonics doesn't always work, and it is time-consuming. Although it is fine to use phonics clues when necessary, constant use of phonics leads to tediousness in reading.

Does anyone criticize the young mathematician for recognizing a rectangle at a glance but for having to count the sides of another figure before he knows it's a decagon? Does anyone criticize the budding poet for recognizing blank verse to be that--at a glance--but for having to scan another stanza before he knows it is trochee pentameter? Or, does anyone criticize the botanist who knows a cyprus at first view but must induce that a certain flower is a frangipani that he's read about in a book but has never seen before? They why are readers criticized for using various types of word recognition clues?

Content of a Phonics Program

Former objections to content of programs

For a long time teachers and children have felt overburdened with vast numbers of phonics generalizations. Many of these "generalizations" had limited usefulness, in that they applied to only a few words that the children read. Others were invalid, in that there were more exceptions to the generalizations than there were instances of application. When being queried by an observant youngster, the teacher too frequently repeated, "That word, Hortense, is an exception to the generalization."

The thousands of Hortenses and Freds lead several reading researchers to supply objective evidence to publishers and teachers that, indeed, our phonics programs had gone far astray (Clymer, 1963; Bailey, 1967; Emans, 1967; Burmeister, 1968a, 1968c). Such evidence gave impetus to the growing demand for revised programs.

There are two possible logical effects of our recognition that many of our generalizations are limited in usefulness and/or validity. One effect might be that the teaching of phonics would be almost eliminated from our reading programs. Another effect might be that researchers examine the language--linguistically--in search of generalizations which are truly descriptive of modern English.

Content components of a modern phonics program - introduction

In essence, there has been a complementary trend in both directions. First, it is now felt that there is a need to teach fewer generalizations than were taught in the past. We describe grapheme to phoneme (written symbol to sound) relationships within morphemes (meaningful parts of words) for the following situations: consonants - single (b, c, d, f, etc.), blends (bl, cl, dr, sm, spl, etc.), digraphs (ph, sh, ch, th, ng, ck), some silent letters (-mb, -lm; wr-, kn-, etc., and two like consonants); vowels - single (a, e, i, o, u, y), clusters (ai, oa, oi, ou, ei, etc.), final single vowel-consonant-e (ape, ice, etc.), the r control (car, her, hear, care, etc.), and the consonantizing of i in the following situations: tio, tia, cio, cia, sio (mansion, action, vision, fusion, caution, etc.); phonic syllabication in the following graphemic patterns: vowel-consonant-consonant-vowel, vowel-consonant-vowel, final consonant-l-e. En toto, then, there are twelve categories that need to be covered in a phonics program.

Particularly useful grapheme to phoneme relationships

I. Consonants

A. Single consonants

1. Each consonant (except c, g, s, and x) is highly consistent in representing one sound.

2. When c or g is followed by e, i, or y, it represents its soft sound (city, certain, cycle; gem, agile, gym). When followed by anything else, or nothing, it represents its hard sound (cake, coat, cup, clash, cram, attic; game, goat, gum, glass, grip, flag). Omit ch and gh.

3. The letter s usually (86% of the time) represents its own sound (swim, soft, solo). Its next most frequent sound (/z/ - 11%) is found in words such as resort, raisin, music, desire, treason.[3] Omit sh.

4. The letter x represents the sounds found in the following words (/ks/ or /k/ + /s/): ax, box, tax; foxy, taxi, vixen, and (/g/ + /z/): exact, exempt, exist, example.

B. Double consonants (and triple consonants)

1. Consonant blends - When two unlike consonants appear side-by-side, usually the sound represented is a blend of the sounds represented by each (block, clown, drown, grow, smile, spook, splash, etc.)

[3]Unless otherwise stated, percentages are taken from the 17,310 words used by Hanna, et al., 1966.

2. Consonant digraphs - Although spelled with two consonants, consonant digraphs function as single consonants. They are ch, sh, th, ph, ng, and ck. Ch represents three sounds: /ch/ child, chop - 63%, /k/ chorus, christen, orchid - 30%, /sh/ chef, chute, mustache - 7%; sh, as in should, ship, shed; th represents two sounds, voiced, as in this, they, rhythm - 74%, and voiceless, as in think, thick, youth - 26%; ph represents an f sound, as in elephant, photo; ng, as in sing, wing, young; ck represents a k sound, as in chick, package, cuckoo. (ck is really two like consonants together, in which c represents the k sound, and is silent - See 3a)

3. Silent consonants

   a. Like consonants - When two like consonants are side-by-side, they represent only one sound. (This is not true of cc or gg when followed by e, i, or y - success, suggest.) E.g., ball, egg, guppy, guerrilla, tattoo.

   b. Unlike consonants - When certain consonants are side-by-side in the same syllable, only one sound is represented. This is true of the following pairs (the only pairs which occur at least once per thousand running words - See Appendix A): initial kn-, as in kneel, knot; initial ps-, as in psalm, pseudo; initial wr-, as in wrap, write; final -dg(e), as in

dodge, bridge; final -gn, as in sign, reign, but also initial gn-, as in gnat, gnome; final -lm, as in calm, palm; final -mb, as in bomb, comb; final -tch, as in catch, witch.

II. Vowels

A. Definitions: The five vowels (a, e, i, o, u) and two "semi-vowels" (y and w) are used singly and in pairs to represent a variety of sounds. The most common sounds are the vowel's own short sound (hat, pet, hit, hot, hut), the long sound (main, meat, size, oak, cute), a schwa (about, camel, pencil, lemon, circus, marriage), an r modified sound (car, care, her, hear, for), a diphthong (out, cow, coin, boy), a broad a - or circumflex o - auto, awful, ball; a long and short double o (rooster, book).

B. Single vowel graphemes[4]

1. Closed syllable (syllable that contains a single vowel and ends with a consonant)--A single vowel in a closed syllable represents its own short sound, its r controlled sound when it is followed by an r, or a schwa sound.

2. Open syllable (syllable that contains a single vowel in a final position)--If the single vowel in an open syllable is an e, o, or u, it usually represents its own long sound; if the vowel is an a, it may represent a schwa - 53%, a long a sound -32%, or a short a sound - 12%;

[4]See Appendix B. Burmeister, 1969b.

if the vowel is i, it may represent a schwa - 49%, a short i sound - 37%, a long i sound -14%.

3. Final y--If a word ends with a consonant + y, the y will represent a long i sound if the word is monosyllabic (try, my, thy, cry), but the y will represent a short i (long e) sound if the word is polysyllabic (baby, balcony, century, city).

C. Vowel pairs

There is no generalization that can be taught to cover a majority of instances of vowel pair grapheme to phoneme relationships. A particular generalization, however, may be taught to cover specific vowel pairs. The vowel pairs listed below need description in a phonics program. They are the only pairs that occur at least 50 times in the 17,310 most common English words selected by Hanna, et al. Please refer to Appendix C for a description of all vowel pair graphemes and their corresponding phonemes in these 17,310 words. (Burmeister, 1968b).

1. First vowel long, second vowel silent--If the vowel pair is ai, ay, ea, ee, oa, or ow, usually the first vowel represents its own long sound, and the second vowel is silent (main, pay, meat, meet, boat, crow). But ea often represents a short e sound (bread), and ow often represents a diphthong (cow).
2. Diphthongs--The vowel pairs oi and oy represent a diphthong (coin, boy). The pairs ou and ow often represent

a diphthong (mouse, cow). However, when ou is in a suffix, it represents a schwa sound (dangerous, wondrous).

3. Broad a (circumflex o)--The pairs au and aw represent the "broad a" sound (auto, awful), just as does a when followed by ll (ball, fall).
4. Long and short oo--The pair oo represents two sounds (rooster, book).
5. Ei and ie--The most common sound ei represents is long a (neighbor, weigh). Otherwise ei and ie represent the following sounds, in order of frequency: long e (ceiling, field), short i (foreign, lassie), long i (seismic, die).
6. Ey represents a short i sound, as in honey, or a long a, as in they.
7. Ew represents a long u sound, as in news, or a oo sound, as in flew.

D. Final vowel-consonant-e

1. When a word ends with a single-vowel, single consonant, and an e, the e is silent, and the vowel represents its own long sound. The validity level for each vowel is: a - 78.9%, e - 87%, i - 61.1%, o - 85.6%, u - 78.3%.
2. Exceptions:
   a. There are 68 primary level words which are exceptions to this generalization (See Appendix D).
   b. Groups of exceptions are (1) i-e words in which the i represents a short i sound: live, give, office,

promise; (2) i-e words in which the i represents a long e sound: marine, magazine; (3) a-e words in which the a represents a short i sound, especially -ace, -age, -ate words: surface, palace; average, courage; senate, delicate. (Burmeister, 1969a).

E. Consonantizing of i

When io or ia follows a c, t, or s, the consonant plus the i combine to represent a /sh/ or /zh/ sound: racial, social; mention, caution; pension, mansion; vision, fusion.

III. Phonic syllabication

(Phonic syllabication generalization are used only when morphological syllabication generalizations do not apply--i.e., prefix/root/root/suffix.)

A. Determiniation of a syllable -

1. There is one, and only one, vowel phoneme (sound) in a syllable.
2. There is one, and only one, vowel grapheme (symbol) in a syllable. Vowel graphemes are (a) single vowels - cap, me, baby, (b) vowel pairs, or clusters - main, round, beautiful, (c) a final vowel (consonant) e - cake, Pete, home.

B. Generalizations

1. Situation: two vowel graphemes separated by two consonants (v c c v)--

When two vowel graphemes are separated by two consonants, we divide between the consonants: as-ter, sil-ver, tar-get, but-ler.

It is suggested that words containing two like consonants between two vowel graphemes not be included in this generalization (except cc and gg when followed by e, i, or y) because only one sound is represented by these two consonants. Instead words containing two like consonants might be included in the v c v generalization (rab(b)-it, car(r)-ot, ba-(l)loon, e-(s)say).

2. Situation: two vowel graphemes separated by a single consonant (v c v)--

When two vowel graphemes are separated by a single consonant, the consonant may go with the first or the second vowel. In primary level words, it is more likely to go with the first vowel; in more difficult words, it tends to go with the second vowel. At all levels, there is about a 45-55 split. (liz-ard, lem-on, wag-on; ra-zor, spi-der, ti-ger). (Burmeister and Trela, in progress).

3. Situation: word ending in a consonant-l-e -- When a word ends in a consonant-l-e, these three letters compose the final syllable (bi-ble, ea-gle, bun-dle, tur-tle, noo-dle).

Components of a Phonics Lesson

Almost every phonics lesson is composed of four parts:

1. auditory discrimination
2. visual discrimination

3. blending - analytic (letter substitution) or syntl etic

4. contextual application

Explanation of parts

In auditory discrimination a check is made to determine whether the learner can orally identify the sound represented by the grapheme being taught. Often the children are asked to clap whenever the sound is spoken in a word, and perhaps in a certain position in the word, and to raise their hands if it does not occur in the spoken word. Thus children who need extra help are identified to be taught to distinguish from other sounds - the sound being taught.

For example, the teacher may ask the children to clap when a short a sound occurs in a list of words such as the following, which she reads, and to raise their hands when it does not occur: cat, fat, head, ban, tad, put. The child who claps when head or put is said, and the child who raises his hand when cat or fat or ban or tad is said probably needs extra help in auditory discrimination of the short a sound.

Visual discrimination often accompanies--or directly precedes or follows--auditory discrimination. The child being taught about the sound which d represents in an initial position may work along with the teacher in composing a chart such as this:

d	D
dog	Dick
dig	Dad
dock	Dolly
dirty	Dorothy
draw	Donald
drill	Daisy

When we work with whole words (as above)--or with even larger units, such as phrases and sentences--the approach is termed analytical.

When working on "blending" using an analytic (word) approach, the teacher commonly uses a type of CLOZE technique, in which a letter in a word is deleted and others are substituted. For example:

bat ⟶ _at ⟶ hat or cat or fat

or

bat ⟶ ba_ ⟶ bad or bag or ban

or

bat ⟶ b_t ⟶ bet or bit or but or boat or beet or beat

Another analytic "blending" approach utilizes sentences. The following is a morphological, not phonic, approach:

The boy is jumping.

The boy is ____ing.

singing.

going.

acting.[5]

Other approaches are synthetic in nature:

/k/ + /a/ + /t/ = cat; /r/ + /a/ + /t/ = rat (phonic)

C + A + T = cat; R + A + T = rat (alphabetic)[6]

Contextual application is necessary to assure that meaning is attached to the spoken word. Once a word is recognized through the

[5] See Lefevre, 1964, 1968.

[6] See Bloomfield and Barnhart, 1961.

use of phonics, the teacher assures herself that meaning is related to it by asking the child to use it in a meaningful sentence or by using it thus herself. Pictures, real objects, or experiences may also be used to clarify meaning.

On the other hand, perhaps the word was phonically analyzed because it appeared in context. Demonstrating that the triple-associate relationship exists completes the teaching-learning circle.

Summary

In an attempt to describe the place of phonics in a word attack program, five areas of word attack were discussed: sight, the use of context clues, morphology, phonics, and the dictionary. Facility in the use of all of these, and in combining them, is necessary for a person to be an independent reader.

Next, twelve situations which require description in a phonics program were discussed: four related to consonant graphemes, five related to vowel graphemes, and three related to phonic syllabication.

A brief description of the four components of most phonics lessons was also included: auditory discrimination, visual discrimination, blending, and contextual application.

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