

Nonverbal Reading Approach

The Nonverbal Reading Approach is a reading strategy designed for students with severe speech and physical impairments. It provides nonverbal students a strategy to sound out words. It also provides a way for teachers to assess if the student can read targeted words. To accomplish this, the Nonverbal Reading Approach utilizes internal speech, diagnostic distraction arrays, and error analysis in conjunction with specific adaptations and assistive technology to promote reading skills. This approach can be used along with any desired reading curriculum to make it accessible for students with severe speech and physical impairments.

Nonverbal Reading Approach: Guided Practice

When students are not physically able to verbalize phonemes for sounding out words, they need to be taught a strategy to help them decode words. The Nonverbal Reading Approach teaches students to systematically use internal speech. **Internal speech** is the process of silently speaking to oneself or saying something “in your head”. Since there has been research demonstrating the development of sound-blending skills in the absence of speech production abilities (Smith, 1989), internal speech is a useful strategy to teach students to say the sound “in their head” or “to themselves” as they are sounding out words. It is important that when the student says a word using internal speech, that they do not verbalize, but concentrate on saying it in the head to “hear” the sounds internally the way they should be pronounced. To promote active participation, the student may be encouraged to say the sounds aloud to the best of his ability prior to sounding the word out “in his head” or he may sound out each sound “in his head” and then say the sound aloud as best as he can.

Students are initially guided through the process of using internal speech. (See Figure 1). The teacher starts by showing the word. At this point, the student may sound out each letter aloud to promote active participation. Next, the student is shown the first letter (by covering the rest of the word with paper or pointing to the first letter) and is told to “Say in your head this sound”. When guiding the student, the teacher says the sound aloud while the student is saying it to himself. The next letter is shown and the student is instructed to “Say in your head this sound” as the teacher says it aloud. This continues until the word is completely sounded out. The student is then told to “Say it in your head, all together” while the teacher sounds it all out together. Last, the student is told to “Say it in your head fast” as the teacher says the word.

Additional instruction may be given after the student sounds out the word using internal speech. This may include comparing this word to a previously learned word, pointing out prefixes or suffixes, explaining a rule or way to think of the word, giving a definition, and/or using the word in a sentence, as well as writing and spelling activities. Since the emphasis on reading should be reading more than single words, using the words within sentences becomes important. Teaching comprehension of each word or sentence will also be important.

Figure 1**Use of Nonverbal Reading Approach: Guided Practice**

GUIDED PRACTICE	
Process	Example Script
Active participation	<p>1. T: "Lets look at some new words together"</p> <p>2. T: "Look at this word." (T. shows student entire word.) <i>Example: ham</i></p> <p>3. T: "Lets sound it outloud together" T. points to each letter saying the letter sound outloud, along with the student making the sounds, approximations, or noises.</p>
Internal speech: letter sounds	<p>4. T: Teacher shows only the first letter of the word (by covering other letters with a piece of paper) and says, "Say in your head this sound", Teacher says the sound outloud, and student looks at card without making any sound. (Note- if the word has a blend (st, sh, etc), these are shown together and pronounced as one sound) <i>Example: h</i> <i>Teacher says "hhhhhhh" Students says "hhhhhh" in his head</i></p> <p>5. T: Shows the next letter of the word by moving the paper, and repeats step 4 for each letter (phoneme) for the entire word. <i>Example: ha (Teacher uncovers next letter)</i> <i>Teacher says "aaaaaaa" Student says "aaaaaaa" in his head</i> <i>Example: ham (Teacher uncovers next letter)</i> <i>Teacher says "mmmmmm" Student says "mmmmmm" in his head</i></p>
Internal speech: blending slow	<p>6. T: "Now, in your head, say it all together. Don't stop between sounds." T.- Point to each sound and slowly sounds out the word outloud as S. sounds out word using internal speech. <i>Example: ham</i> <i>Teacher says "hhhhhhaaaaaammmmm" as pointing to each letter sound and students says "hhhhhhaaaaaammmmm" in his head.</i></p>
Internal speech: blending fast	<p>7. T: "Now, say it in your head fast". T. says the entire word out loud. <i>Example: Teacher says "ham" as student says "ham" in his head.</i></p>
Additional instruction	<p>8. Teacher may do additional instruction here. Comparing the word to other learned words, pointing out certain sounds, showing picture of what a ham is, etc. <i>Example: Student had learned the word "hat" and teacher shows how the words begin in a similar fashion and how the ending sound makes it different.</i></p>

Nonverbal Reading Approach: Evaluating Student Knowledge

When evaluating the student, the above sequence is used, but the teacher does not provide the sounds or say the word. The teacher instead encourages the student to say the letter sounds using internal speech. (See Figure 2). To evaluate whether the nonverbal student is learning the words, he or she is given an array of choices from which to select the answers to the teacher's questions during reading activities. A **diagnostic distractor array** is a list of alternative choices provided to the student, either orally or written, which are designed to evaluate the student's acquisition of the targeted material (i.e., targeted words). The student's selected choice from the array should indicate that the student does or does not know the answer. In addition, if the student does not know the answer, the selection from the diagnostic distractor array should indicate the student's error patterns.

Diagnostic distractor arrays typically consist of the correct answer and two or more additional items that have been explicitly selected to determine that the student knows the target word. For example, if the student was learning the word, "ball" and the choices in the array were "cat," "ball," "dog," and "tree," the selection of the word "ball" only tells us that the student can accurately select the correct first letter (b) of the word, but may not know the word "ball" from the word "big". If the distractor array was "bill," "ball," "bell," and "bail," the correct selection would only tell us that the student could select the correct vowel sound of the word.

Diagnostic distractor arrays should then be carefully chosen to assure the teacher that the student knows the word. Initially, a diagnostic distractor array may begin by including a very similar word, a word with a different ending, and a word with just the vowel sound different. For example, if the target word was "ball", the distractor array could consist of "bill," "ball," "doll," and "bat". The distractor array would later be changed based upon the types of errors the student is making. One study (Heller, Fredrick, and Diggs, 1999) demonstrated the dramatic differences in words the students chose to select, based upon indiscriminate, dissimilar distractor arrays and diagnostic distractor arrays. This study showed that inadequate distractor arrays can leave the false impression that the student knows the word, when he may only know the first letter or some other aspect of it.

A third aspect of the Nonverbal Reading Approach is the use of error analysis. An **error analysis** is a careful examination of the type of errors the student is making when being instructed, as well as the presence of any error patterns occurring across time. Detection of errors and error patterns, will help guide the teacher to select correction strategies and reevaluate the student's knowledge by changing the diagnostic distractor array. In the previous example, the student selects "bat" instead of "ball". The student is either confusing "tt" and "ll" sounds, not sounding out the entire word and blending it, or not attending. Correction may take the form of providing more instruction with the "l" and "t" sounds, reinforcing blending skills, and/or teaching the student to attend to all of the sounds in the word. When reevaluating the student, the distractor array should be changed to include more differences in the last sound, such as "ball", "ban", "bat", back".

The final aspect of the Nonverbal Reading Approach is the use of assistive technology to assure proper assessment, instruction, comprehension, and practice of target reading material. Assistive technology to promote reading may include the use of augmentative communication devices, devices to allow access to choices, and computer adaptations to facilitate responses. Each of these must be individually selected and assessed as to its accuracy and effectiveness in

facilitating the reading process.

Figure 2 **Use of Nonverbal Reading Approach with Direct Instruction**

EVALUATING STUDENT KNOWLEDGE	
Process	Example Script
Active participation	1. T: "I'm going to give you some words to read. First, you will sound out the word, then I'll give you some spoken choices and you tell me which is correct. OK? Here we go."
Internal speech	2. T: "Look at this word." (T. shows student entire word.) 3. T: "Sound it outloud" (T. points to each letter as student makes sounds, approximations, or noises.) 3. T: Teacher shows only the first letter of the word (by covering other letters with a piece of paper) and says, "Say in your head this sound." 4. T: Shows the next letter of the word by moving a card and repeats steps 3 for each letter (or phoneme) of the entire word. 5. T: "Now, in your head, say it all together. Don't stop between sounds." (T.- Point to each sound) 7 T: "Now, say it in your head fast".
Diagnostic Distractor Array	8 T: "I'll give you four choices. Listen to your choices. Your choices are: [choice 1], [choice2], [choice 3], [choice4]. Is it [choice 1]? (wait for S. response). Is it [choice 2]? , etc.)."
Data	Student indicates his/her answer and teacher writes student's selection on the data sheet.
Error Analysis & Correction	9. T: If student gives correct answer, confirm correct selection. If student gives incorrect answer, reteach using guided practice to sound out the word together and reteach any specific area missed based on the word selected from the distractor array. (Ex. Teacher would use guided practice in Table 9-6 and then examine what the student incorrectly selected. (For example, if S. selected "hat for ham", teacher would reteach "m" and "t" and emphasize looking at the last part of the word. Next time this word is evaluated, the distractor array will contain "hat" as a distractor, as well as other words with "t" and different ending sounds. 10. Look across data for any error patterns and reteach problem areas.

Bigge, J., Best, S., Heller, K.W. (2001). Teaching individuals with physical, health, and

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