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# Clozing the Placement Gap: A New Tool for Administrators and Teachers

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ONE of the problems faced regularly by teachers is the placement of children in reading materials of appropriate difficulty. It is commonly accepted that materials should be of sufficient difficulty to provide challenge for the student, while at the same time providing him with a high probability for success.

It is felt that standardized reading test scores generally do not represent children's instructional reading levels. Informal Reading Inventories (IRI's), on the other hand, can be used to accurately determine instructional reading levels. But IRI's are difficult to construct and to administer; they are time-consuming and require individual administration. On an IRI the child is asked to read one passage orally and one passage silently at each reader level. His oral reading errors are recorded along with his comprehension for each passage. The instructional reading level is then determined as the highest level at which the child can pronounce at least 95 percent of the words and answer 75 percent of the comprehension questions.

The cloze procedure appears to provide an alternative to the inaccuracy of the standardized test and the excessive expense of the IRI. It requires much less time and energy on the part of the teacher, and recent

research indicates that its accuracy is comparable to that of Informal Reading Inventories (Alexander, 1969).

The purpose of this paper is to review the research on cloze procedure as it is used to determine independent, instructional, and frustration reading levels. (For information on other uses of cloze procedure, the reader is referred to summaries by Bormuth, 1968a, 1968c, and Rankin, 1965.)

Cloze tests can be simply made from any passage by replacing every *n*th word with an underlined blank space of a standard length. For testing purposes, the most frequently used deletion pattern is every fifth word. Responses are usually scored correct only if they match exactly the deleted words, ignoring minor misspellings (Taylor, 1953, 1957). Passages should be about 250 words in length (Bormuth, 1965).

### Background

In assessing the accuracy of cloze tests for determining children's reading levels, researchers have compared cloze test results with multiple-choice comprehension tests, with oral reading tests, and with informal reading inventories. In all cases the results have been similar.

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Bormuth (1967) used 100 children in grades four and five to determine comparable scores on cloze tests and multiple-choice tests over nine different passages. He reported that a cloze test score of 38 percent was comparable to a multiple-choice test score of 75 percent and a cloze score of 50 percent was comparable to a multiple-choice test score of 90 percent. When the multiple-choice test scores were corrected for guessing, the cloze scores comparable to 75 percent and 90 percent were 45 and 52 percent, respectively. The product moment correlation between the two types of tests was .946. Bormuth suggested replication of this study as he observed a ceiling effect operating when too many of the subjects had perfect scores on the multiple-choice test.

In a later study, Bormuth (1968b) examined the oral reading abilities of 120 children in grades four, five, and six. The four forms of the Gray Oral Reading Test were used. Since the published tests have only four questions for each paragraph, Bormuth

modified them by writing additional questions, so that for all the paragraphs except the first, there were either eight or ten questions. Of the four forms of the Gray, each child read two paragraphs orally, and took two cloze tests over the other two. Comparable scores were determined by finding the highest level at which the child scored 75 percent comprehension and recording the cloze score he achieved at that difficulty level. The cloze test scores of 44 percent and 57 percent were reported to be comparable to the criterion scores of 75 percent and 90 percent comprehension, respectively. These scores are similar to the scores corrected for guessing reported in his earlier study.

It was interesting to note that the observed comparable scores are somewhat different for oral reading, particularly at the 95 percent word recognition level (33 percent cloze score). The comparable cloze score for the 98 percent word recognition level (independent level) was 54 percent, roughly equivalent to the comprehension comparable

score. Bormuth's interpretation was that the criterion score of 95 percent word recognition may not be comparable to the comprehension score of 75 percent.

The Gray Oral Reading Test was also used by Kirby (1968), who found it to be less comparable with cloze achievement than the Gilmore Oral Reading Test, with children in grades one through six. The Gray Oral consistently placed children's instructional reading levels lower than the cloze tests, the Gilmore Oral, and the Gates Reading Survey. The higher scores on the Gates would be expected, in that standardized silent reading tests are commonly thought to place children either at a maximum instructional level or at frustration level. Cloze scores were comparable to reading levels established by the Gilmore. Kirby concluded on the basis of her data that cloze procedure is a promising technique for determining instructional reading levels, particularly as reading skills increase.

The differences in Bormuth's and Kirby's results on the Gray Oral may be accounted for by a difference in the scoring of speed or by the revisions in comprehension questions made by Bormuth. Bormuth did not indicate whether he timed the oral reading. Since he mentioned the changes in comprehension questions, and then reported results for comprehension and for word recognition, it might be assumed that he did not count the time factor. On the other hand, substantial differences could have been caused by the number of questions on each test passage. If a child missed one question out of four in Kirby's study, whatever his cloze score was, it would then be comparable to 75 percent comprehension. One mistake on Bormuth's ten questions would make the same cloze score comparable to 90 percent comprehension. It would appear more likely that the differences are the result of Bormuth's more precise consideration of comprehension.

The greatest differences between performances on cloze tests and the other tests in Kirby's study occurred at the lower reading levels. She concluded that cloze tests may be less appropriate for younger children. As a result, she modified the cloze tests by provid-

ing three alternative answers for each deleted word. The children were to select one of the three. She reported this to be an improvement. Gallant (1965) reported a similar change and found it to be helpful for less mature children.

Other researchers have also questioned the appropriateness of cloze for children in first grade. Ransom (1968) reported that the correlations between cloze test results and informal reading inventory placements were not significant for the children in grade one. Bloomer (in Greene, 1968) suggested that a mental age of ten or higher is required to function with written cloze tests.

The research of Kirchhoff (1968), however, does not support this statement or the concern about young children. He used cloze procedure with 120 first graders near the end of first grade, and reported cloze procedure as a "valuable aid" to the first grade teacher in establishing instructional reading levels. Correlations between cloze test results and informal reading inventory placements were reported as significant for all reading levels in his first grade population.

Additional research may be needed with cloze in first grade, since findings to date are inconclusive.

For children in grades two through six, Ransom (1968) reported significant correlations between cloze test results and placements on informal reading inventories.

Bormuth (1969) approached the question of instructional reading levels in another way. He investigated the amount of information a subject was able to gain in materials where he achieved various cloze test scores. He formed 130 pairs of students, ranging in school from grade three to graduate students. The pairs were formed on the basis of reading ability as indicated by cloze scores. One member of each pair was given another cloze passage to determine the difficulty of that passage for the pair. The second member of each pair was given a multiple-choice test over the same passage. He guessed as many answers as he could first, then read the passage and took the test again. The difference between his two scores on the multiple-choice test was inter-



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preted as the amount of information he gained from reading the passage. The information gain for each pair was then compared with the cloze test score for the same pair on the given passage. The results indicated that a student can gain little information from studying materials on which his cloze readability score is less than 37 percent. When reading materials on which he scores much above 57 percent, information gain is also small. The greatest amount of information gain appeared to occur between 37 percent and 57 percent on cloze tests.

In his dissertation, Alexander (1969) compared test results for 365 children in grades four, five, and six. Rankings on cloze test scores correlated highly with Gates-McGinitie test scores. Children's performance on an informal reading inventory constructed using the same passages as the cloze test was compared with their cloze test scores. Alexander concluded that if cloze passages and the informal reading inventories are carefully and properly constructed and ad-

ministered, cloze tests can be expected to identify independent, instructional, and frustration levels as accurately as informal reading inventories. In comparing the informal with cloze tests, he suggested that a cloze score of less than 47 percent would represent frustration level; 47 percent to 61 percent would represent an instructional level; and a score higher than 61 percent would represent an independent reading level. It should be noted that these scores are not very different from the criterion reference scores reported by Bormuth.

Rankin and Culhane's (1969) replication of Bormuth's (1967) study added substantial support to the criterion scores reported previously. The cloze scores found comparable to 75 percent and 90 percent comprehension are 41 percent and 61 percent, respectively.

Research Study	Reading Level		
	Frustration	Instructional	Independent
	Cloze score less than:	Cloze score between:	Cloze score greater than:
Bormuth (1967) Multiple-Choice Test	45	45 and 52	52*
Bormuth (1968) Gray Oral Reading Test	44	44 and 57	57
Bormuth (1968) Information Gain	37	37 and 57	57
Alexander (1969) IRI	47	47 and 61	61
Rankin and Culhane (1969) Multiple-Choice Test	41	41 and 61	61

\* Bormuth stated that a ceiling effect was operating in his 1967 study, with numerous children achieving perfect scores on the multiple-choice comprehension test. This would account for the lower cloze score comparable to the 90 percent comprehension level.

Table 1. Cloze Test Percentage Scores Comparable to Independent, Instructional, and Frustration Reading Levels

Table 1 shows the comparable scores between cloze tests and various other tests as established by Alexander, Bormuth, and Rankin and Culhane.

## Summary

These criterion scores, established separately at various times by independent researchers using different materials, indicate that a score of between about 40 percent and 60 percent on a cloze passage will mean that the material is at the child's instructional reading level. A score much less than 40 percent will represent frustration level and a score of over 60 percent will indicate the child's independent reading level.

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