A study investigated the concurrent validity of the cloze test administered with an essay test to Korean university students. Subjects were 129 students enrolled in English-as-a-Second-Language courses in Korea. A seventh-word deleted cloze test and a descriptive essay test were administered. Analysis of results indicate a significant correlation between the two tests, confirming the findings of two previous studies that cloze tests can be used as an alternative to essay tests. Theoretically, the results suggest that writing proficiency may be an important factor in cloze performance. Practically, the results suggest that the cloze procedure may be effective as a teaching device. The cloze test, cloze test instructions, and essay test instructions used are appended. Contains 21 references. (Author/MSE)
The Concurrent Validity of Cloze Test with Essay Test among Korean Students

SOYOUNG LEE
The Concurrent Validity of Cloze Test with Essay Test among Korean Students

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This study investigated the concurrent validity of the cloze test with the essay test among Korean university students. A total of 129 students enrolled in freshmen English courses in Seoul, Korea, participated in this study. A seventh-word deleted cloze test and a descriptive essay test were administered to the students. A significant correlation between the two tests (r=.67 by the exact-word method and .64 by the acceptable-word method) was found. This result confirms the finding of two previous studies (Fotos, 1991; Hanania and Shikhani, 1986) that cloze tests can be an alternative to essay tests. This study has both theoretical and practical implications. Theoretically, the finding of this study seems to be an answer to the question of the construct of the cloze test. Practically, it suggests the use of the cloze procedure as a teaching device in classroom situations in Korea.

INTRODUCTION

Discrete-point tests have been widely used in evaluating students' English language proficiency in Korea. The advantages of discrete-point tests such as machine grading that enables to control massive number of examinees have been appealing. However, important concerns have been expressed in the second and foreign language literature that performance on a discrete-point test may indicate not overall language ability but intensive learning of isolated grammatical rules (Hanania and Shikhani, 1986). The same concerns have been also a critical issue in the English education field in Korea. The situation has been worrisome; six years of English learning during the period of middle to high schools results in only some reading ability but little ability of speaking, listening, and writing for most students. It is understandable considering that most English teachers in Korea are nonnative speakers and that, unlike listening and reading tests, it is difficult to develop objective scoring formats for speaking and writing tests. However, the disadvantages of a discrete-point test for the evaluation of the productive ability merit serious concern; such a test tells a great deal more about learners' ability to recognize correct elements of the language than about their ability to use their knowledge effectively with a listener or a reader.

Accordingly, the use of an integrative test for the evaluation of speaking and writing ability deserves attention. In particular, if there is an integrative test that is easy to prepare, administer, and score in evaluating the productive skills of speaking and writing, it will be very useful for English teachers in Korea who experience difficulties in dealing with the productive ability on tests. In this respect, cloze tests seem to be a promising approach. In fact, the usefulness of cloze tests has been recognized by some researchers. Hanania and Shikhani (1986) found significant correlations among a cloze, an essay, and a standard
ESL tests. Fotos (1991) reported that with careful preparation the use of cloze test as a writing proficiency measure can yield high validity and reliability estimates.

This study has a purpose of confirming the concurrent validity of the cloze test with the essay test among Korean students. So far, many studies have attempted to validate cloze tests with various discrete-point tests (Bachman, 1985; Brown, 1980, 1983) and shown a significant correlation between cloze tests and discrete-point tests. However, there has been little research on the validation of cloze tests with integrative tests to which cloze tests belong. Shohamy's (1983) study investigating the relationship between an oral interview and the cloze procedure, and Fotos's (1991) and Hanania and Shikhani's (1986) studies demonstrating high validity of cloze tests with compositions are a few studies. Thus, this study is to see whether cloze tests can measure the ability that essay tests measure among Korean students.

METHODOLOGY

Subjects
The subjects in this study were 129 college first-year Korean students who were native speakers of Korean studying in two private universities in Seoul, Korea in March, 1995. Their majors were electronics, child and family, sport and leisure studies, Russian language and literature, chemical engineering, and management. Eighty-five students were male and forty-four students were female. They were enrolled in freshmen English classes that are required for all freshmen in the universities.

The subjects in this study were a homogeneous group with regard to nationality, language background, age, and educational level. The students ranged in age from 18 to 20. While no measure of overall English language proficiency was available for the students, it can be said that all of the students had taken six years of formal English courses in middle and high schools prior to this study. Their 1995 college entrance English test scores indicated they were in the top 10% group of those who took the test.

Material
This study needed two kinds of material: a cloze test and an essay test. The cloze test was prepared according to the procedures of Hanania and Shikhani (1986) and Fotos (1991). First, the students' reading ability level that would guide the choice of cloze texts was decided by Dale and Chall's (1948) readability formula using two college entrance English tests. Then, three different texts were picked from two textbooks designed for seventh or eighth graders in the U.S.A. Finally, three passages of about three hundred words for the rate of fifth word deletion were prepared to yield fifty blanks from the texts. From the passages, three different cloze tests were constructed. A pilot study led to revised cloze tests
with seventh deletion rate, thirty blanks, and more contextual information. As a pretest, the revised versions of the three cloze tests were tried out to 100 college first-year students. The form that showed the highest K-R 21 reliability estimate was selected for the final use, which is shown in Appendix A.

The essay topic, "Plans for College Life," was chosen since it was related to the students' general experience, motivated the students to write about, and was likely to elicit a variety of linguistic structures within the students' previously learned lexical and syntactical knowledge. The topic did not require argumentation or definition of abstract concepts. The students were expected to write about one page on the given topic.

**Procedure**

The cloze and essay tests were administered to four English classes of 129 students in March, 1995 with the cooperation of the English instructors. The cloze test was timed to take twenty minutes and the essay test was timed to take twenty-five minutes. The direction for taking the cloze test and scoring method were read aloud to the students as they read them silently. A sample test was used to orient the students to the testing format. The direction and sample test are shown in Appendix B.

After the collection of all cloze tests, the essay test was administered. The instruction, topic, and scoring criteria of the essay test were also read aloud to the students as they read them silently. The students were given a blank page of paper to write the essay on. The instructions for taking the essay test and criteria by which the essays were graded are shown in Appendix C.

**Scoring of the tests**

The cloze tests were scored twice by both exact-word method, which counts only the same words as in the original passage as correct, and acceptable-word method, which counts any contextually appropriate words as correct as well as the words in the original passage. The grading of the cloze tests was done by the author and a native speaker. The author graded the cloze tests by the exact-word method and the native speaker did by the acceptable-word method. The criteria for an acceptable response were taken from the previous research (Stubbs and Tucker, 1974).

The essay tests were graded independently by three native speakers. The graders used a nine-point Likert-type scale holistically with the consideration of three criteria. The nine-point scale and three criteria taken in grading the essays were from Reid and O'Brien (1981). The nine-point scale, going from 1 (poor) to 9 (excellent), has five main levels: poor, fair, average, good, and excellent. The three criteria are: 1) English structure (the use of grammar and mechanics), 2) content (the quantity and quality of thought and diction), and 3) organization (the process of thought and support).
Prior to the actual evaluation of the essays, a standardization process was made to ensure the overall reliability of the holistic essay evaluation, which was a grader training session. The standardization process consisted of the steps taken in Reid and O'Brien (1981). First, the principles of holistic grading were explained and discussed by the author. Then, the description of the scoring criteria was distributed, read, and discussed. Finally, the graders were each given a group of three writing samples and asked to evaluate the samples in terms of the criteria. When each grader had finished, discussion of the scores followed in an attempt to arrive at a near unanimous rating (within one point). This practice session was repeated three times to refine the perceptions of the graders.

**Data analysis**

Statistical analysis was performed in three ways. First, descriptive statistics such as means, standard deviations, and reliability estimates of the two tests was calculated. For the cloze test, the K-R 20 method was used to determine internal consistency reliability. The interrater reliability for the essays rated by all three graders was calculated following the steps suggested in Perkins (1986). First, the evaluations of all raters were intercorrelated. An average of all three correlation coefficients was derived. To derive the average correlation coefficient, the Fisher Z transformation was used because the correlation coefficient was on a non-linear scale. Then, the average correlation coefficient was adjusted using the Spearman-Brown Prophecy formula to make the final reliability estimate reflect the number of graders.

Second, the transformation of raw scores of the two tests was made for the purpose of easy comparisons; the maximum raw scores for the tests were 30 for the cloze test and 9 for the essay test. Raw cloze scores were recorded and multiplied by 3.3 to obtain percent scores for total cloze performance. Raw essay scores given by the three graders were averaged and then the average scores were multiplied by 11.1 to obtain percent scores for total essay performance. Finally, the Pearson's product-moment correlation was performed to see how the two tests correlated with each other. It indicated the degree of commonality among the tests.

**RESULTS**

The findings on basic information of the two tests, such as means, standard deviations, and reliability estimates are first presented. Then, the result of the correlational analysis is presented.

Table 1 presents the mean, standard deviation, and K-R 20 reliability estimate of the raw cloze test scores.
Table 1.
Mean, standard deviation, and reliability of the raw cloze scores (n=129)

<table>
<thead>
<tr>
<th>Scoring Method</th>
<th>Mean</th>
<th>SD</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact-word</td>
<td>10.21</td>
<td>3.88</td>
<td>.73</td>
</tr>
<tr>
<td>Acceptable word</td>
<td>13.42</td>
<td>4.75</td>
<td>.78</td>
</tr>
</tbody>
</table>

* The maximum cloze score was 30.

Table 1 shows that the cloze mean score of the present study by the exact-word scoring method was relatively high in comparison with the cloze mean scores obtained in previous research. In Fotos's (1991) study, the mean score of was 12 out of total score of 50. In Brown's (1993) research, the means of fifty cloze tests ranged from 1.02 to 9.92 out of total score of 30, though his "natural" cloze tests were found to be more difficult than typical cloze tests.

The mean score by the acceptable-word scoring method was higher than the mean score by the exact-word scoring method. The difference of the mean scores between the two methods was 3.21. In other words, the mean score by the acceptable-answer scoring method was about 10% higher than the mean score by the exact-answer scoring method.

The cloze test reliability was estimated using the K-R 20 method. The K-R 21 method used in previous research (Fotos, 1991; Hanania and Shikhani, 1986) was criticized for its underestimate or sometimes overestimate of reliability in spite of the advantage of easier calculation (Brown, 1993) and thus avoided in the data analysis of the main cloze test; the assumption of the K-R 21 procedure that all of the items are of equal difficulty is rarely met on real tests. The reliability estimates were fairly high, which means the cloze test is reasonably reliable to produce consistent results.

The correlation coefficient between the exact-word and acceptable-word scoring methods was .94, which was significant (p < .01). The coefficient of determination, the value obtained by squaring the correlation coefficient, indicates the percentage of overlapping variance between the two scoring methods. The .88 coefficient of determination indicates the two methods were strongly related to each other.

Table 2 presents the mean, standard deviation, and interrater reliability estimate of the raw essay test scores. Table 2 shows that students' writing proficiency was slightly below the average, which was 5 on the nine-point scale going from 1 (poor) to 9 (excellent). As the small value of standard deviation indicated, most essays (about 60% of the total essays) were in the category of 4 to 6, which were below average, average, and above average. The high .89 interrater reliability estimate of the essay tests calculated using the average of intercorrelation
coefficients and the Spearman-Brown Prophecy formula confirmed that holistic evaluations of essay tests are reliable (Flahive and Snow, 1980) as well as valid.

Table 2.
Mean, standard deviation, and reliability of the raw essay scores (n=129)

<table>
<thead>
<tr>
<th>Mean</th>
<th>SD</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.22</td>
<td>1.23</td>
<td>.89</td>
</tr>
</tbody>
</table>

* The maximum score was 9.

Finally, in Table 3 are listed transformed scores of the two tests from raw to percent correct in order to make easier comparisons among the two tests.

Table 3.
Means and standard deviations of the percent correct scores of the cloze and essay tests (n=129)

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze (Exact-word)</td>
<td>33.69</td>
<td>12.81</td>
</tr>
<tr>
<td>Cloze (Acceptable word)</td>
<td>44.28</td>
<td>15.68</td>
</tr>
<tr>
<td>Essay</td>
<td>46.87</td>
<td>13.62</td>
</tr>
</tbody>
</table>

The maximum score of each test was 100.

The relationships between the essay and cloze scores

Table 5 presents the relationship between the cloze scores and the essay scores, which was expressed by the Pearson's product-moment correlation coefficients.

Table 5.
The relationships among the cloze and essay (n=105)

<table>
<thead>
<tr>
<th>Pairs of Tests</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay and Cloze (Exact-word)</td>
<td>.67</td>
</tr>
<tr>
<td>Essay and Cloze (Acceptable word)</td>
<td>.64</td>
</tr>
</tbody>
</table>

Both correlations were significant at p<.01
The correlations indicate a degree of commonality between the tests and confirm their validity as tests of language proficiency. The .67 correlation coefficient between the essay and cloze scores is noticeable in that lower correlation coefficients between essay and cloze scores were found in previous studies: .51 from Hanania and Shikhani’s (1986) samples of college applicants and .46 from Fotos’s (1991) samples of college freshmen. Besides, considering that the students in this study were restricted samples in terms of their college entrance English test scores, the high correlation coefficient was remarkable; lower correlation coefficients are expected for a truncated sample.

DISCUSSION

This section discusses the results of the data analyses in light of possible explanations coming from the existing literature.

Descriptive statistics

The cloze mean score of the present study is not in line with the mean scores shown in previous studies (Chavez-Oller et al., 1985; Fotos, 1991). Fotos’s (1991) conclusion that “cloze test mean scores are rather low regardless of the institution, the language tested, or the type of students, especially when exact scoring is used” (p. 329) does not fit in the present research. The higher cloze mean score of the present study appears to result from the analysis of readability level of the participants of this study prior to the selection of the possible cloze passages. Unlike the previous research, this study used Dale and Chall’s (1948) readability formula to decide the students’ reading level correctly. The evaluation of the students’ reading ability was found to be the readability formula score of 6.64, indicating the reading level of seventh to eighth graders in the U.S.A. This evaluation on the basis of a scientific calculation led to a more correct selection of cloze passages than that based on testers’ subjective judgments or random choices made in the previous studies.

Besides, the revision of the cloze passages made after a pilot study and the final selection of the cloze test made after a pretest seem to contribute to the higher cloze mean score. The importance of careful preparation and selection of cloze tests emphasized in Fotos’s (1991) study is again confirmed. This confirmation is in line with a study by Brown (1993) in which the conclusion was drawn that “tester/researcher intervention is necessary for developing sound cloze test” (p. 110). In fact, a tester or a researcher’s cloze selection decision on the basis of the most desirable descriptive characteristics such as reliability statistics makes cloze tests reliable and valid tests of overall second or foreign language proficiency. However, since the variation in the effectiveness of cloze tests has been found to be considerable (Brown, 1993), the view of cloze tests as an automatic indicator of second or foreign language proficiency is not advocated in this study.
The .73 (by the exact-word method) and .78 (by the acceptable-word method) reliability estimates of the cloze test in this study are noticeable considering that homogeneous samples in ability levels are often associated with low reliability estimates (Brown, 1993). Despite the restricted range of the cloze scores found in the homogeneous group of the subjects in this study, the fairly high reliability estimates are reported indicating the cloze test is reasonably sound.

The strong relationship between the two scoring methods indicated by the correlation coefficient confirms the findings of the previous research (Oller, 1973; Stubbs and Tucker, 1974) and suggests the easier exact-word scoring method could be appropriate for use by nonnative speaker teachers. Another support for the use of the exact-word scoring method, which has been criticized for discouragingly yielding low scores to the cloze test takers, comes from the about 10% difference of the mean scores between the two scoring methods found in this study. The difference of the mean is quite small in comparison with Brown's (1980) study in which the mean by the acceptable-answer scoring method was 71% higher than the mean by the exact-answer scoring method.

The near-average mean score and the small value of the standard deviation for the essay test seem to show that the subjects in this study are homogeneous with regard to English writing proficiency. It should, however, be noted that just one sample of essay may be insufficient to evaluate the writer's composition ability (Henning, 1987). In fact, after finishing the essay scoring, one of the essay graders mentioned that nearly all essays were similar in terms of the amount of writing and writing style as well as the content of writing. Thus, rather than single compositions often criticized for unreliable representations of writing proficiency, several writing samples whose topics are various are recommended as a more correct measure of writing (Henning, 1987).

The .89 interrater reliability estimate for the essay scores in this study confirms holistic evaluations can be reliable. The subjectivity involved in holistic scoring due to bias, fatigue, and shifting standards from one paper to the next is reduced by several techniques: establishment of criteria to focus graders' attention on significant aspects of the writing, training of graders until they achieve close agreement in the assessment of the same paper, and three independent ratings of each essay.

Validity of the cloze test as a writing measure

The observed high correlation between the essay and cloze tests reflects the concurrent validity of the cloze test as a writing measure. The common integrative nature between the essay and cloze tests is proved. This means both tests require students to draw upon several language skills, which are production of language rather than recognition of correct items. Hanania and Shikhani (1986) and Fotos (1991) viewed the commonality between the two integrative tests is related to the testing of higher-order language abilities.
Limitations

There are some limitations in this study. First, in spite of the efforts put in the design of the cloze test used in this study, the cloze test has not resolved the problems of generalizability and the equivalence of items across different forms. This situation is related to the validity issue. Considering the remark that "... validity is related more to the individual items of the test than to general variables, such as rate of systematic deletion ..." (p. 108, Hanania and Shikhani), the cloze test needs the identification of item characteristics for a more suitable test format.

Second, some study (Stansfield and Hansen, 1983) shows that students' field independence has a consistent relationship with cloze performance. The correlation found between field independence and performance on cloze tests seems to indicate a cognitive style bias operates in cloze solutions. On the other hand, test anxiety was found to affect students' cloze performance (Oh, 1992; Shohamy, 1982). Considering that affective factors have a strong impact on students' performance in testing and learning, the examination of the effect of test anxiety on cloze performance should be needed in research on cloze tests. Thus, certain nonlinguistic characteristics, which have not been considered in this study, are worthy of further investigation and interpretation.

Finally, the evaluation of a student's writing proficiency through an essay sample has been controversial, especially, when holistic scoring is used. Single compositions are said to be unreliable representations of writing proficiency (Arthur, 1979). Thus, to reduce the threats to reliability, the elicitation of multiple writing samples is recommended to control for the fact that writing proficiency may vary with topic (Henning, 1987). With more reliable evaluations of students' writing proficiency, the relationship between cloze and essay scores would be accurately revealed.

Implications

The result of this study has both theoretical and practical implications. Theoretically speaking, the results of this study may be an answer to the question of what underlying factors are involved in cloze test performance. The strong relationship between the cloze and essay tests confirms writing proficiency may be an important factor to explain cloze performance. Further investigation of the factors to influence cloze performance, both linguistic and nonlinguistic, may lend insights into how such factors operate in cloze solutions.

Practically speaking, the confirmation of the cloze procedure as a valid language proficiency test suggests the use of the procedure beyond a testing format. It can be used as an effective teaching device. Hinofotis (1987) suggests some variations in the cloze format suited for classroom use such as use of the cloze format in an exercise in listening comprehension. Such a modified use of the cloze procedure is found in other research (Buck, 1988) and indicates
individual teachers can vary the cloze format to suit their instructional needs in the classroom.

Conclusion
This study aims to determine whether cloze tests can measure Korean students' English writing proficiency. Result supports the view that cloze tests can be used as an integrative measure of writing proficiency. However, for the effective and accurate use of cloze tests, careful preparation of cloze tests should be done. In addition, nonlinguistic factors such as cognitive and affective style bias should be considered in the interpretation of cloze test scores.

REFERENCES


### APPENDIX A

**Cloze Test**

As the head chef of a 120-seat formal Northern Italian restaurant, I have cooked many beautiful and delicious meals. The most important critics, our customers, have for four years in a row named us their favorite restaurant in this city. All of the hard work has paid off.

This career of mine was not (1)_______ with any foresight at all. Rather, (2)_______ kind of snuck up on me (3)_______ blossomed unexpectedly.

The beginnings of my (4)_______ were quite typical: I was out (5)_______ college, broke, and in debt. When (6)_______ set out to look for a (7)_______, my criteria were simply to find (8)_______ that I enjoyed, and to use (9)_______ natural ability. I decided to try (10)_______.
At first, I wondered whether I made a wise choice. My first position exposed me to all of the evils of the restaurant business. There the owners who cared only about bottom line, and the managers who nothing about food and who cared less.

I wanted a job where cooking was taking place. I looked a place where quality products would handled professionally, and where I would able to contribute what I had offer.

So, eight years ago, I an apprentice here at Giovanni’s. Working this kitchen proved to be a “education” for me. I gradually became of how temperature, cooking times, and affected the look, texture, and flavor the food I was preparing.

On down side, the hours were murder. kitchen was as hot as a furnace. I worked under a disagreeable chef.

This man eventually left, and that was the turning point for me. Although I had very little experience, almost no trained help, and a hot summer ahead, I took over as the new chef.

Answers for cloze test
1) planned 2) it 3) and 4) career 5) of 6) I 7) job 8) something 9) my 10) cooking 11) had 12) cooking 13) the 14) were 15) the 16) knew 17) even 18) real 19) for 20) be 21) be 22) to 23) became 24) in 25) good 26) aware 27) ingredients 28) of 29) the 30) The

APPENDIX B

Directions for Taking Cloze Tests

At the bottom of this page is a sample of a new kind of test. The test is made by copying a few paragraphs from a book. Every seventh word was left out of the paragraphs, and thirty blank spaces were put where the words were taken out.

Your job will be to guess what word was left out of each space and to write that word in that space. It will help you in taking the test if you remember these things:

1. Write only one word in each blank.
2. Try to fill every blank. Don’t be afraid to guess.
3. You may skip hard blanks and come back to them when you have finished.
4. Wrong spelling will not count against you if we can tell what word you meant.
5. All blanks can be answered with ordinary words.

Sample Test
Below is a sample of the test to help you to be familiar to the main test. Fill each blank with the word you think was taken out. You may check your paper when you finish it by looking at the answers which are written at the bottom of the page.
What is a friend? More than (1) _______ father, more than a brother: A (2) _______ companion. With him, you can conquer (3) _______ impossible.

1) a 2) traveling 3) the

APPENDIX C

Instruction
This is a test of your ability to write an essay in English. When I give you the test paper, you will have twenty five minutes to write an about one page essay. The topic you are write about is stated on the test. You may take a few minutes, if you want, at the beginning of the test, to make notes or an outline for your essay on the back of the paper you receive. If you do not have enough space on the front of the page, you may continue on the back.

Criteria of evaluation
Your essay will be evaluated as to your ability to communicate effectively in writing. We will look at three qualities in particular: English structure, content, and organization.
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