**Abstract**

    This study investigates a doctoral students' English writing proficiency test held in 1998 at National Chiao Tung University. The test was broadly divided into indirect measuring part (i.e. the multiple-choice items) and direct measuring part (i.e. two pieces of passage writing), each of 50% in score. Item analysis techniques are thus employed to examine the former part by computing the indexes of item difficulty (ID) and item discriminating power (IDP) of each item as well as discussing the response frequency distribution of particular items. Text analysis techniques are conducted to explore the direct measured data in terms of the use of topic sentence and discourse markers (DM's). The ID's tell that items of sentence-long grammar question are not necessarily easier for the doctoral students than those testing for passage-level discourse organization. The IDP's show all the items discriminate positively. However, they seem to be a little more to the easy end on the continuum of ID's and probably not discriminating enough. A further look at the response frequency distributions of particular items shows even an "ideal" item with good ID and IDP may have ineffective distracters. Then, text analysis of the direct measured data yields more findings. First, quite a few students may have no idea of topic sentence in paragraph development and these students score significantly lower than those who have topic sentence in the passages. Next, the occurrences of different DM's in the passages vary considerably; some are accumulated high because they are natural to

the intended organization pattern of the writing task. Third, the total number of DM's doesn't seem to have much to do with the score of a passage; nevertheless, extremely high or low occurrences of DM's in a passage may be a bad omen of writing ability. Finally, a few error types of DM's are identified. Some suggestions as implied by the present study are presented to the test constructors and writing instructors at the end.

**Introduction**

In Taiwan, college days seem to have been the final chance for students to receive formal English instruction, but writing courses are usually not included in college English curriculum. What's worse, English proficiency has not been considered to be one of the thresholds a doctoral student should cross for advanced studies; it seems the expertise can be a cover for his weakness in language skills. Actually this necessary academic writing ability won't be inherently developed along with the students' education level and years of age. For these and other reasons, doctoral students often suffer great difficulty in their academic writing tasks, and there is broad consensus in the academic and education circles on the issue of improving English writing proficiency of doctoral students.

A policy for making such improvement has thus been established at College of Electrical Engineering and Computer Science, National Chiao Tung University. All the doctoral students, except those obtaining 550 or above in TOEFL Test, are required to pass the English writing proficiency test; those who fail the test will have to take two technical writing courses: basic technical English and English research paper.

Accordingly, the test has been defined as an ever-lasting measure for the doctoral students' English proficiency in academic writing. This study is thus designed to examine the English Writing Proficiency Test 1998: applying the techniques of item analysis and text analysis to explore the indirect measuring and direct measuring parts respectively. The findings can be revealing in two aspects. First, it will be a useful reference for understanding doctoral students' perception and problem of English academic writing and their ability in passage writing. The results will be of immediate help for the course design of technical writing at Chiao Tung University. Second, the English Writing Proficiency Test can be appropriately adjusted to serve the intended screening purposes.

**Results and Discussion**

**Item Analysis of the Indirect Measured Data.** The mean of item difficulty (ID) tells sentence-level grammar questions (mID=64.0) seem to be more difficult for the students than those of discourse organization (mID=73.9). Overall the indirect measuring questions are more to the easy side on the continuum of item difficulty.

Item discriminating power (IDP) is to check an item's effectiveness to differentiate the high achievers from the low achievers. We find more examinees in the high-scoring group than in the low-scoring group get each and every item right. However, only 4 items are considered to be discriminating enough on the basis of the acceptable limit value of .25 as suggested by Oller (1979:252).

The analysis of response frequency distribution shows there are strikingly high or low occurrences of certain provided choices. This reveals the corresponding question items are relatively easy for the students to distinguish the correct answer from the other distracters.

**Text Analysis of the Direct Measured Data.** For Part III, 95 out of the total 175 passages (54%) contain a topic sentence; for Part IV, 72 out of 174 (41%) are found to have a topic sentence. And a two-tailed T-test tells the passages with topic sentences are scored significantly higher than those without topic sentence.

With regard to discourse markers, we find the large occurrences of contrasting signals in Part III and those of causal signals in Part IV seem to reflect the organizational nature of either writing task. On average, students use about the same number of DM's in the two parts (3.88 for Part III vs. 3.87 for Part IV). But the actual use in individual passages varies considerably from 0 to 11. The extremely low frequency is mainly attributed to the students' poor proficiency in English writing, for many of them fail to finish their writing during the time limit. On the other extreme extraordinarily high frequency shows some undesirable reasons: habitual overuse and/or misconception of certain DM's. Besides, students also produce grammatical errors, spelling errors, and punctuation errors when using DM's in their passages.


**Conclusions**

This study uses both item analysis and text analysis techniques to examine a doctoral students' English writing proficiency test to get a whole picture of the test itself and students' performance on the test.

The analysis of ID tells that items of sentence-long grammar question are not necessarily easier for the doctoral students than those testing for passage-level discourse organization. The IDP indexes show all the items discriminate positively. However, they seem to be a little more to the easy end on the continuum of ID's and probably not discriminating enough. The text analysis of the passages shows: First,

quite a few students may have no idea of topic sentence in paragraph development and these students score significantly lower than those who have topic sentence in the passages. Next, the occurrences of different DM's in the passages vary considerably; some are accumulated high because they are natural to the intended organization pattern of the writing task. Third, the total number of DM's doesn't seem to have much to do with the score of a passage; nevertheless, extremely high or low occurrences of DM's in a passage may be a bad omen of writing ability. Finally, grammatical errors, spelling errors, and punctuation errors of DM are also found.

**Self-evaluation**

The results of the present study are useful for the test constructors and writing instructors. For example, the smaller the scale of the intended answer, the easier for students to manage. However, since doctoral students need to complete a full text in every academic writing task, both types of test items thus should be retained in the future test. On the other hand, the larger the scale of writing task is, the more problems we will find in the text. This implies to us writing instructors that any grammar knowledge or writing instruction without practice in passage writing may not be helpful for these doctoral students.

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