Vocabulary through Reading Test: PIE Research Report

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Abstract

In the placement/exit exam at the PIE, vocabulary is only addressed in a tertiary fashion through productive speaking and writing tasks. The present report summarizes the development and analyzes the results of a test that measures student abilities to define technical terms in introductory university textbooks as an addition to the existing PIE placement exam. Problems with pilot results led to significant revision for the final form of the test, however the final form with appropriate revisions was found to be justified in use as a component of the PIE's placement exam. Examination of test results and the test itself suggest that there may be a division between subconstruct abilities, explicit and extended definitions against contextual definitions, initially thought to have been included under the same construct.

Background

As it currently stands, the placement test used by the university and PIE to admit/place international students does not include an explicit vocabulary section. Vocabulary is addressed in a tertiary fashion within rubrics of the writing and speaking portions of the placement test. While this may serve as a useful indicator of a test taker's existing vocabulary, it does little to address the ability to process new terminology in their field of study. Two key factors loom large over the vocabularies of prospective international students. First, according to Norbert Schmitt (2008), knowledge of 8,000-9,000 word families is required to "read a wide variety of texts without unknown vocabulary being a problem," though learners with less could "cope" (p. 331). Unfortunately, even students with up to 2,400 hours of classroom instruction may only have knowledge of half of those word families (Schmitt, 2008). Second, the prevalence of technical vocabulary in university textbooks, which we could reasonably assume to be largely unknown for second language (L2) international students, is considerable: Mihwa Chung and Paul Nation (2003) found that technical words in one introductory text constituted 37.6% of the total, which is markedly different from the relatively minimal lexical demands experienced by students in English learning course books (Matsuoka & Hirsch, 2010). John Read (2000) even suggests that these technical terms are out of the realm of English as a second language (ESL) instruction. When faced with specialized reading assignments in the university, with technical terms that they could not possibly be expected to know upon entrance, students require an ability to extract meanings from the text, thus allowing them to "cope." A need to assess that coping ability provided the impetus for creating the Vocabulary through Reading Test, a test designed for norm-referenced interpretations to be used for PIE placement/admission to the university.

Research Questions

In our research at the PIE, we sought to answer the following questions:

1. Does the Vocabulary through Reading Test make a meaningful interpretation about the ability to define new terms in university textbooks?

2. Would use of the Vocabulary through Reading Test to make placement/admission decisions be justified?

Methods

To answer the research questions, one class of Level 5 students was asked to participate in the pilot administration of the Vocabulary through Reading Test. The pilot test consisted of three reading passages adapted from current NAU 100-level textbooks, with seven items for each passage requiring students to supply a definition for an unknown term found in the text. 50 minutes were allotted for students to complete the test. The testers then scored each student's test individually, discussed any scoring issues, and then completed statistical analysis of the test records.

Results

The descriptive statistics for the pilot form are in Table 1, shown below.

Table 1

Descriptive Statistics for Pilot Version of the Vocabulary through Reading Test

	N	K	Min	Max	Mean	SD
Total	16	21	2	16	10.19	4.09
Explicit Definitions	16	7	2	7	4.75	1.69
Extended Definitions	16	7	0	7	3.69	2.02
Contextual Definitions	16	7	0	3	1.75	0.93

Upon more detailed item analysis, including difficulty and discrimination, and considering measures of reliability (interrater reliability and internal consistency), we eliminated several items to arrive at a final form. Descriptive statistics for the final form are found below in Table 2.

Table 2

Descriptive Statistics for the Final Form of the Vocabulary through Reading Test

	N	K	Min	Max	Mean	Standard Deviation	Internal Consistency	SEM
Total	16	12	1	12	7.00	3.33	0.82	1.41
Explicit Definitions	16	6	1	6	3.81	1.68	0.63	1.02
Extended Definitions	16	6	0	6	3.18	1.83	0.69	1.02

Based on the final form test performance, we feel that the test does make a meaningful interpretation of a revised iteration of the ability tested and would be justified for use in helping to make placement/admission decisions for prospective students.

Relevance

This research is relevant to the PIE and language learning for several reasons. First of all, the test itself was conceived with the PIE context in mind as an augmentation to the current PIE placement/exit exam in which vocabulary is largely addressed in a tertiary fashion via written/spoken extended response rubrics. Second, investigation into the results suggested that varying levels of context require different abilities to define unknown terms within a text. We found that explicit definitions (either a copular sentence with a definition predicate or some sort of appositive noun phrase) and extended definitions (usually some sort of copular sentence to introduce the term and subsequent details or examples given) activate a similar ability while contextual definitions (no direct definition offered, only global contextual clues) require a

different ability. This leads to the third point of relevance. By considering the items as technical

terms or non-technical terms and examining their level of contextual support, we suggest that

university textbooks use identifiable grammatical and/or discourse structures to introduce new

technical terms. This has implications for the teaching of academic reading, and we call for

more research in this domain.

References

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