ATTAINED WRITING PROFICIENCY: ONE FACTOR OR MORE?

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There is convincing evidence that language has a uni-dimensional trait rather than a multi-dimensional one. On the one hand, several recent empirically-based language testing researchers have shown that a single factor of language proficiency can account for substantial amounts of variance in various types of language tests and in both verbal and non-verbal IQ scores; see Oller (1979:423-458) for a review of this research. On the other hand, a much earlier work, Spencer and Holtzman (1965) suggested that composition cannot be disassociated from the other language skills, i.e. grammar, listening, reading, speaking. Spencer and Holtzman argued and presented data to support their contention that composition cannot be taught and cannot be tested independently of the whole of language. Using factor analytic techniques Spencer and Holtzman identified a general factor of English language and possibly the existence of an academic ability factor and an attitude factor in a large corpus of data.

In particular, Spencer and Holtzman identified the following factors in the data from their subjects taking the Penn State battery and the Lado Tests from the University of Michigan:

Factor I - a general ESP (English Language Proficiency) factor, with significant leadings from

1. Sound discrimination, a listening trait
2. Dictation, a listening and writing trait
3. Reading comprehension
4. Scrambled text, a reading and composition trait
5. Vocabulary, a reading trait
6. Incomplete-sentence completion (structural or completion), a writing trait
7. Michigan aural comprehension, a listening trait;

Factor II - An unidentifiable factor with loadings from
1. Sound discrimination, a listening trait
2. Written stress, measuring intellectual knowledge about speaking
3. The Lado test of writing;

Factor III - Attitude toward the English Language and the U.S. (Spencer and Holtzman 1965:119)

This paper reports the results of a study, influenced by Spencer and Holtzman's research, whose focus was to determine whether there were uni-dimensional or multi-dimensional traits in attained writing proficiency measures and attained English language proficiency measures from adult students of English as a second language.

PROCEDURES

Subjects

This study was conducted at the Center for English as a Second Language (CESL), Southern Illinois University at Carbondale. The subjects from whom data were collected were attending the most advanced intensive English course at CESL. These students averaged 74.92 on the Michigan Test of English Language Proficiency with a standard deviation of 5.7; their native countries were Costa Rica, Honduras, Iran, Japan, Kuwait, Lebanon, Libya, Taiwan, and Venezuela.

Materials

The compositions for this study were written for the following exam: "Choose one of the following topics and write a fifty-minute composition. Write as much as you can, because you will be graded on how much you write as well as how well you write. You may use dictionaries.

Topics:
(a) Describe features of American life you have found attractive or unattractive.
(b) Discuss the importance of foreign language training for better international understanding.
(c) Choose one area or group in your country that has special problems. Describe the problems and try to indicate why they exist."

During the same week the subjects took the entire Michigan Test of English Language Proficiency battery, i.e. Michigan Grammar, Michigan Vocabulary, Michigan Reading, Michigan Aural Comprehension. The four subtests are labeled "Grammar," "Vocabulary," "Reading," and "Aural Comprehension" and no claims are made that the labels are valid descriptions of what the subtests actually measure (See Upshur and Homburg 1980).

In addition, the Test of Standard Written English (TSWE), published by the Educational Testing Service, was administered to the subject pool. The TSWE consists of 50 multiple-choice questions and requires 30 minutes for administration. According to the test manual, the TSWE evaluates a student's ability to recognize standard written English. The TSWE scores are used to help place native English speakers into appropriate freshman composition courses. It has been administered to native speaker populations as a part of the Scholastic Achievement Test. Two types of questions are included in the test, those on usage and those on sentence correction. Students scoring 60 (converted score) on the TSWE are usually exempt from the freshman composition requirement. Students scoring from 35 to 59 are usually placed in regular composition courses. Students scoring below 35 would probably be assigned to "bonehead" remedial composition.

Objective Measures.

The following objective measures were identified and quantified in the compositions written by the subject pool: words per composition, sentences per composition, T-units per composition, error-free T-units per composition, words per error-free T-unit, total number of errors, T-unit length, clause per T-unit ratio, a syntactic complexity formula developed by Botel, Dawkins and Granowsky (1973), and a complexity index influenced by Endicott (1973) and developed by Flahive and Snow (1980).

The T-unit and its derivatives have been widely used in both first and second language acquisition research. The Botel, Dawkins and Granowsky formula is said to be based on transformational grammar, experimental data from children's processing of syntactic structures, and studies of oral and written language data by children. Various sentence types are given different counts according to their syntactic difficulty.

Endicott's complexity measure was based on morphological and transformational complexity. Flahive and Snow adapted Endicott's model and assigned points to certain morphological and grammatical structures (see Flahive and Snow 1980 and Perkins 1980 for further details).

Analysis

The objective measures, the Michigan and the TSWE data were submitted to a factor analysis, using a varimax procedure, so that the way the data clustered could be explored. The factors and their loadings are presented in Table 1, next page. As Table 1 indicates, five factors were identified in the data:

Factor 1 - An unidentifiable factor with substantial loadings from
1. Words per error-free T-unit
2. Michigan Grammar
3. Michigan Total

Factor 2 - A composition-length factor with significant loadings from
1. T-units per composition
2. Words per composition
3. Sentences per composition

Factor 3 - A syntactic complexity factor with loadings from
1. Clause per T-unit ratio
2. T-unit length
3. Flahive-Snow complexity index

Factor 4 - A reading factor with loadings from
1. Michigan Reading
2. Michigan Vocabulary
3. Test of Standard Written English

Factor 5 - An aural comprehension factor with a substantial loading from
1. Michigan Aural Comprehension

All the variables examined in this study are language-related, so that it is impossible to ascertain whether a general language proficiency factor underlies the data. If these variables, along with other non-language variables had been submitted to analysis, and if the language variables had

TABLE 1: FACTOR LOADINGS

Rotated Factor Pattern

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Words/Comp.	-0.13901	0.89940	0.23680	-0.08630	0.16636
Sentences/Comp.	-0.01080	0.82671	-0.35519	0.00405	0.01704
T-units/Comp.	-0.18757	0.90618	-0.27721	-0.03083	0.02436
Error-free T-units/Comp.	0.54024	0.63062	-0.21645	0.14733	-0.25576
Words/error-free T-unit	0.84400	-0.19414	0.03550	-0.12933	0.10666
Errors/Comp.	-0.89194	0.30239	0.03967	-0.15112	0.15324
Errors/T-unit	-0.81835	-0.16296	0.15262	-0.35618	0.22435
T-unit length	0.03382	-0.28335	0.89920	0.08345	0.16435
Clause/T-unit ratio	-0.25902	0.05798	0.90678	-0.17813	0.01280
Botel, Dawkins, Granowsky	0.03497	0.42088	0.05019	-0.75106	0.23905
Flahive-Snow	0.19716	-0.27859	0.68693	0.48890	-0.16632
Michigan Grammar	0.75098	-0.06464	0.02663	0.22142	0.20574
Michigan Vocabulary	0.56852	0.13125	0.03928	0.56615	0.21759
Michigan Reading	0.38889	0.28098	-0.01012	0.70598	-0.15435
Michigan Aural Comprehension	0.05389	0.09440	0.03137	-0.09557	0.89873
Michigan Total	0.70684	0.15960	-0.06814	0.49311	0.34885
Test of Standard Written English	0.36318	-0.11374	0.28187	0.55679	0.40093
Percent of Total Variance Accounted For	32%	23%	13%	9%	6% =83%

clustered together, then it would have been possible to claim that evidence existed for a general language proficiency factor. In addition, there is no single factor derived from the data on which all variables exhibited substantial loading--in fact, there are language variables that show negative loadings on all the factors.

Factor 1 has the appearance of being a sentencecraft variable with words per error-free T-unit, Michigan Grammar, Michigan Total, Michigan Vocabulary and error-free T-units per composition having the highest positive loadings. All these variables directly relate to the control of sentence production.

Factor 2 is most certainly a "spew" factor with the "quantity" variables having the highest positive loadings: T-units per composition, words per composition, sentences per composition, and error-free T-units per composition.

Factor 3 reflects syntactic complexity, embedding, and grammatical sophistication in the data set. Clause per T-unit ratio is a measure of subordination; T-unit length is a measure of main clause elaboration and embedding; the Flahive-Snow index is a measure of transformational and morphological complexity.

Factor 4 has been labelled as a reading factor because of the loadings from Michigan Reading, Michigan Vocabulary, and the Test of Standard Written English. I maintain that in order to do well with the TSWE, a student must be able to read well and recognize usage phenomena and grammar. The loadings from Factor 4 tend to support that assumption.

Since there was only one substantial loading on Factor 5, i.e. Michigan Aural Comprehension, it is unambiguously an aural comprehension factor.

I believe that the factors derived from this analysis support, with qualification, Spencer and Holtzman's claim that composition is not disassociated from listening, speaking, grammar, or reading. First, no data from a speaking task were included in the analysis. But Factor 1 has loadings from the Michigan Total which includes Reading, Vocabulary, Aural Comprehension and Grammar and various objective measures of attained writing proficiency. Factor 2 has loadings from both

quantitative and quality qualitative aspects of writing proficiency. Factor 3 has loadings from various manifestations of attained writing proficiency. If the TSWE can be shown to have construct validity for non-native speakers of English, Factor 4 illustrates that writing attainment is multi-dimensional.

As a final point, it must be pointed out that all the objective measures utilized in this study focus on sentence-level phenomena. They do not in any way tap coherence, cohesion, content, organization, the ability to isolate, develop and support a line of thought and a writer's attempt to accommodate intended audience. And therein lies a serious shortcoming of this research.

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