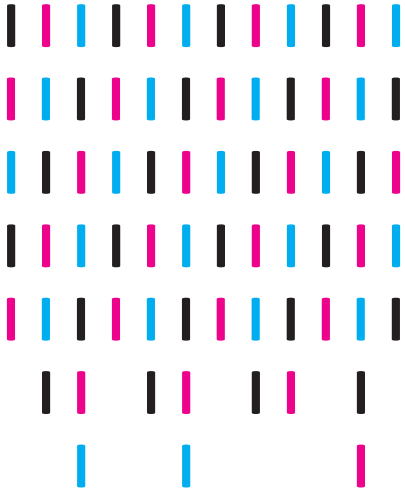

NEPS SURVEY PAPERS

Inge Blatt, Christian Lorenz, and Anna Prosch

NEPS TECHNICAL REPORT FOR ORTHOGRAPHY: SCALING RESULTS OF STARTING COHORT 2 IN GRADE 4

NEPS Survey Paper No. 36
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NEPS Technical Report for Orthography[1]:

Scaling Results of Starting Cohort 2 in Grade 4

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[1] This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 2 – 4th Grade, doi: 10.5157/NEPS:SC2:6.0.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

NEPS Technical Report for Orthography: Scaling Results of Starting Cohort 2 in Grade 4

Abstract

In the National Educational Panel Study (NEPS), the orthography competency is measured as a stage-specific supplement in secondary school from Grades 5 to 9 and in elementary school in Grade 4. In this paper, the test and its theoretical framework in Grade 4 are introduced, followed by a description of the data, of data analysis, and its results for the Scientific Use File. The aim of this Technical Report is to provide a description that will enable the scientific community to understand and use the data in an appropriate way. In doing so, the paper seeks to clarify in advance any potential questions that may arise concerning the data and to motivate data users to further analyze the data of the orthography competency in Grade 4.

Keywords

spelling competency, orthography

1. Introduction

Most competencies are measured coherently across the life span in the National Educational Panel Study (NEPS), that is, reading, mathematics, and domain-general cognitive functioning. These competencies are complemented by stage-specific measures that occur in specific educational stages. This is also true for the spelling competency, which is measured in NEPS Stage 4 – From Lower to Upper Secondary School (Grade 5 to 9) and in Stage 3 – From Elementary School to Lower Secondary School (Grade 4).

The spelling test used in NEPS was developed in previous works by Inge Blatt and Andreas Voss for Grades 4 and 5 (Voss et al., 2007; Blatt et al., 2007; Jarsinski, 2010; Frahm et al., 2011). In the National Educational Panel Study this test was then further developed during the course of the study with an identical framework but changed content. Like most competence tests, the scaling is also carried out by using models based on item response theory (IRT) in order to evaluate the quality of the test.

This paper presents the results of the analyses for the spelling competency in Starting Cohort 2 – Grade 4. First, the theoretical framework and its realization are briefly described. Thereafter, the analyses of its results are explained.

The present report is modeled on the technical reports by Pohl, Haberkorn, Hardt, & Wiegand (2012) and Haberkorn, Pohl, Hardt, & Wiegand (2012). We would like to thank Steffi Pohl and Kerstin Haberkorn for developing and providing standards for the technical reports.

2. Testing Orthography Competence

The framework and test development for the orthography competence test have already been described in Blatt et al. (2011) and Frahm et al. (2011). Therefore, we will give only a brief outline of the framework and the tests used in the National Educational Panel Study.

The framework distinguishes between five subskills of orthography (phonographic syllabic subskill, morphological subskill, peripheral subskill, derivational subskill, and syntactic subskill). In order to measure these subskills, structural units of words (e.g., reality: #real #ity) are assigned to subskills, with each subskill consisting of 15 to 42 structural units in Grade 4. The subskills usually correlate highly. On top of this distinguished model, each word is also assessed at whole-word level, regardless of the subskills. Hence, the test offers an insight into two levels of orthography, depending on what kind of objectives are pursued for using the test data—either a differential score of spelling based on subskills or a generalized score based on the whole-word level.

The tests consist of a cloze test and full sentences. In Grade 4 there are three full sentences. The tests include three pages that have to be completed within 21 minutes. The test instructions and the test contents were played back from a CD that had been prerecorded with a professional speaker.

3. Data

3.1 The Design of the Study

For the main study in Grade 4, no split design was intended. This came as a result of the testing situation via CD. The entire test group took the test simultaneously.

For Grade 4 the test included 22 words in the cloze test and 35 words in the full sentences. Words that did not provide any information on orthography competency, such as “and”, were eliminated prior to the analyses. Therefore, the data set used for the analyses consisted of 39 full words in Grade 4. Those 39 words in Grade 4 translate into 153 structural units.[1] In the tests they are distributed across all subskills.

The test data were first transcribed by the IEA Data Processing Center (IEA DPC) using transcription conventions that had been established in the context of the PIRLS Study (cf. Frahm et al., 2011). The transcribed data were entered into Microsoft Excel by the IEA Data Processing Center (IEA DPC) and coded automatically by a computerized tool (SRT-Editor) in Stage 4 (cf. Frahm et al., 2011). The data analyses described in this paper were performed by Stage 3 and 4 based on the scaling standards for NEPS (Pohl & Carstensen, 2012a). Deviations from these standards are indicated in the respective paragraphs of this paper.

3.2 Sample

The test was taken by 5,246 students in Grade 4.

4. Analyses

4.1 Missing Responses

In case of a missing item response, the item was coded as -20 = “missing gaps word”, -21 = “missing sentence word”, -22 = “cannot be read”, and -23 = “joke response”.

4.2 Scaling Model

For the data analyses, test data are first transcribed and then coded by a special software developed for this test into dichotomous items (0 = wrong; 1 = right) with missings. Analyses are based on item response theory (IRT) with Rasch’s simple logistic model (Rasch, 1960), and they are conducted via the program ConQuest (Wu, Adams, & Wilson, 1997). Ability estimates for spelling competency were estimated as weighted maximum likelihood estimates (WLEs, Warm, 1989). Person parameter estimation in NEPS has already been described in Pohl & Carstensen (2012a).

4.3 Reviewing the Quality of the Test

The spelling test was specifically constructed to be implemented in NEPS. In order to ensure appropriate psychometric properties, the quality of the test was reviewed. It is important to note that, prior to the analyses, words such as “and” that were correctly solved by a huge majority of the sample and also constants were directly removed. During the estimation of

[1] The number of structural units refers to the items that were used for the statistical analysis.

student ability and item difficulty, some misfit items had to be removed, because they deviated from the PISA reference by a maximum item fit (weighted mean square (MNSQ)) of 1.2 and a discrimination of less than 0.26 (OECD, 2005). For Grade 4 these were 2 out of 39 items at whole-word level and 23 out of 153 items at structural-unit level. 37 items remained at whole-word level and 130 items at structural-unit level.

5. Results

5.1 Parameter Estimates

5.1.1 Item parameter and person parameters

The estimated item parameter and person parameters are represented in the form of item fit, item difficulty, and student ability. The collection of item parameters is provided in the Appendix (see Tables 2 and 3).

At whole-word level and structural-unit level, item fit has removed misfit items not over 1.2. In terms of item difficulty, it becomes evident that both tests still offer easy as well as difficult items. For Grade 4 they are within the range of -6 and 4 for the whole-word level (see Figure 1) and within the range of -3 and 6 for the structural-unit level (see Figure 2). Compared with the whole word, the structural units are, in total, a little bit easier. Students solve more structural-unit items correctly than whole-word items. In total, student ability is high overall.

Map of Item Difficulty and Student Ability

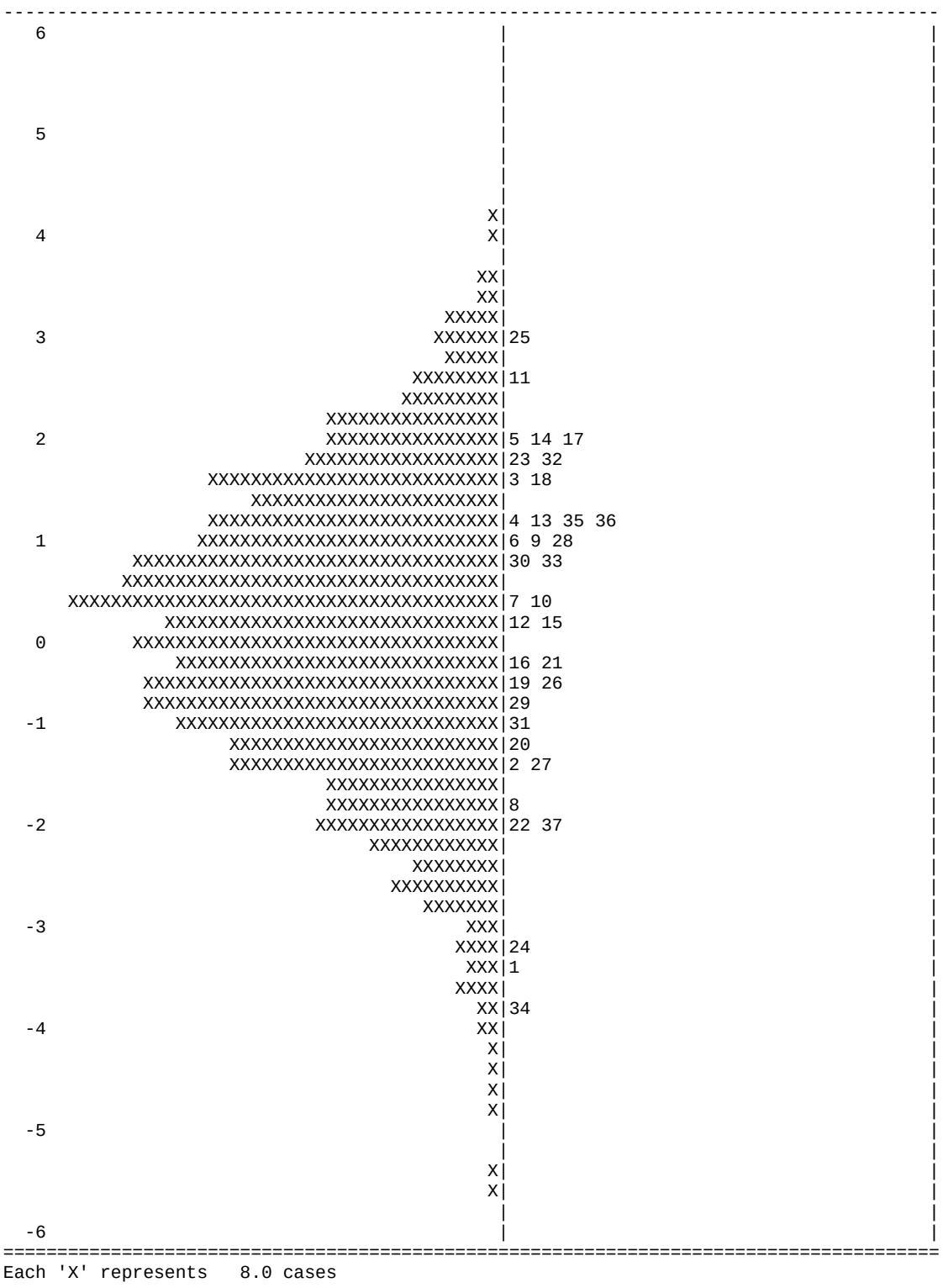

Figure 1. Whole-word level in Grade 4.

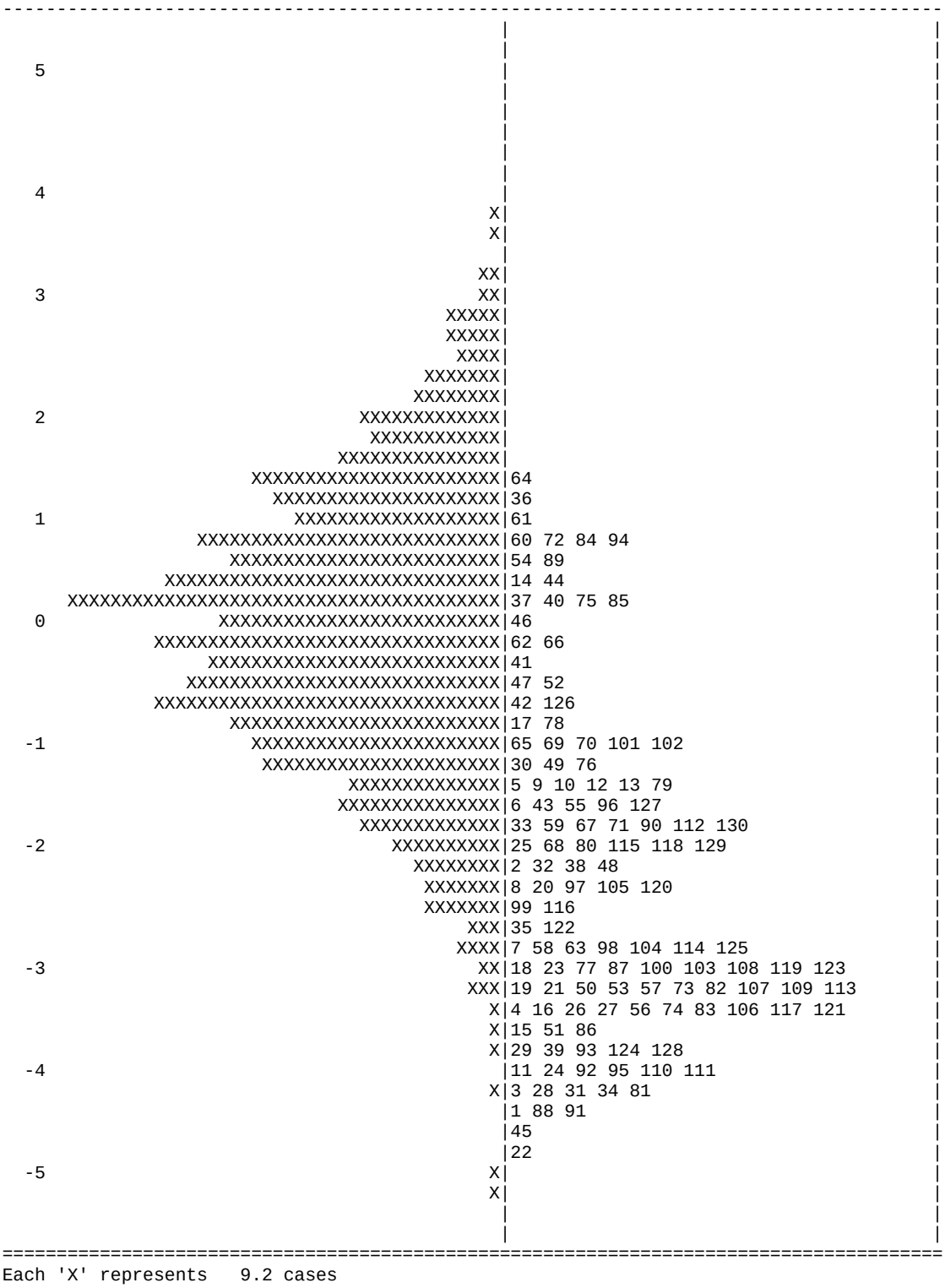

Figure 2. Structural-unit level in Grade 4.

Table 1 shows the results of the descriptive statistics.

Table 1

Descriptive Statistics Grade 4

	N	Minimum	Maximum	Mean	Standard deviation	Variance
org4_sc1a	5246	-5.77	5.40	-0.01	1.63	2.65
org4_sc2a	5246	0.40	1.56	0.46	0.13	0.02
org4_sc1b	5246	-8.57	4.59	-0.04	1.42	2.01
org4_sc2b	5246	0.21	1.44	0.31	0.13	0.02

For Grade 4 the variables org4_sc1a and org4_sc1b are the raw (non standardized) estimated student ability with the standard error in terms of org4_sc2a and org4_sc2b at the whole-word and structural-unit level. It can be transformed according to the needs of the researcher.

5.2 Reliability

For Grade 4 the reliability (EAP/PV) at the whole-word level is 0.921 and 0.964 at structural-unit level. Due to its high value, one can assume that the test is reliable.

6. Discussion

The test has proven to be reliable after item elimination in accordance with statistical criteria. Furthermore, the test is objective because dictation is given from a CD recording and executed by experienced test administrators. However, those statistical processes are not the only steps necessary for developing a reliable test. It must be stressed that prior theoretical work and the development of a common framework are important prerequisites for successful testing. Prior development processes include a thorough interdisciplinary research of linguistics, didactics, and empirical studies.

In order to give further insight into the meaning of the results, it is important to underline the difference of both levels, particularly in terms of item difficulty. At the whole-word level, the difficulty has proven to be statistically adequate. At the structural-unit level, however, a majority of rather easy items has become evident. This is intended as the structural units provide some important additional information on the students' strengths and weaknesses, which allows for a more differentiated insight into their spelling competency. By offering a score on both levels, that is, a general score and a differential one, we are facilitating a variety of options for using the test data according to individual research objectives.

7. Data in the Scientific Use File

There are 167 items in the data set of Grade 4 that are either scored as dichotomous variables with 0 indicating an incorrect response, 1 indicating a correct response and -20, -21, -22, and -23 indicating missing values. Manifest scale scores are provided in the form of WLE estimates (org4_sc1a for the whole-word-level, and org4_sc1b for the structural-unit-level) including the corresponding standard errors (org4_sc2a and org4_sc2b). The ConQuest Syntax for estimating the WLE scores from the items is provided in the appendix.

Users interested in investigating latent relationships of competence scores with other variables may either include the measurement model in their analyses or estimate plausible values themselves. A description of these approaches can be found in Pohl and Carstensen (2012a).

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Appendix

Conquest Syntax (CQC) Grade 4

Whole-word level

```
Title Modell1a: SUF;
set warnings=no, update=yes, constraints=cases;
data whole_word_level.dat;
format idstud 1-7 responses 21-30, 32-55, 57-59;
labels << whole_word_level.nam;
codes 0,1,5,6,7,9;
export log >> whole_word_level.log;

key 1111111111111111111111111111111111111 !1;

model items;
export parameters >> whole_word_level.prm;
export reg_coefficients >> whole_word_level.reg;
export covariance >> whole_word_level.cov;
estimate ! method=quadrature, iterations=1000;
show cases !estimate=wle >> whole_word_level.wle;
show parameters !estimates=latent >> whole_word_level.shw;
itanal >> whole_word_level.itn;
quit;
```

Structural-unit level

```
Title Modell1b: SUF;
set warnings=no, update=yes, constraints=cases;
data structural_unit_level.dat;
format idstud 1-7 responses 61-77, 79-86, 88-99, 101-105, 107, 109-110, 113-142, 145-146, 148-
153, 155-161, 166-173, 175-179, 181-184, 186-200, 202-207, 210-211;
labels << structural_unit_level.nam;
codes 0,1,5,6,7,9;
export log >> structural_unit_level.log;

key
1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111
111111111111111111111111111111111111 !1;

model items;
export parameters >> structural_unit_level.prm;
export reg_coefficients >> structural_unit_level.reg;
export covariance >> structural_unit_level.cov;
estimate ! method=quadrature, iterations=1000;
show cases !estimate=wle >> structural_unit_level.wle;
show parameters !estimates=latent >> structural_unit_level.shw;
itanal >> structural_unit_level.itn;
quit;
```

Item Parameters and Item Fit

Table 2 presents the estimated item parameters for each item on the whole-word level and the structural-unit level for Grade 4. In the first two columns item numbers and item names are displayed. Columns 3 and 4 present the item difficulty by showing the mean and the standard error. The weighted fit is represented by the weighted mean square (MNSQ) and the *t*-value. Finally, the discrimination of the items is shown. Analogously, the same parameters are displayed for the structural-unit level in table 3, in which column 3 additionally provides information about the structural unit each item is attributed to.

Table 2

Whole-Word Level Grade 4

		ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
	ITEM	ESTIMATE	SE	MNSQ	T	
1	org41001_c	-3.400	0.058	1.06	1.4	0.31
2	org41002_c	-1.326	0.037	1.02	0.8	0.50
3	org41003_c	1.543	0.037	1.01	0.7	0.49
4	org41004_c	1.078	0.035	0.94	-4.0	0.58
5	org41005_c	1.875	0.039	0.96	-1.9	0.49
6	org41006_c	1.018	0.035	0.87	-8.4	0.62
7	org41007_c	0.257	0.033	0.95	-3.6	0.60
8	org41008_c	-1.834	0.040	1.07	3.2	0.43
9	org41009_c	1.016	0.035	0.94	-3.7	0.58
10	org41010_c	0.304	0.033	0.98	-1.4	0.58
11	org41011_c	2.555	0.045	0.88	-4.7	0.49
12	org41012_c	0.197	0.033	0.87	-9.1	0.65
13	org41013_c	1.120	0.035	1.08	4.8	0.48
14	org41014_c	1.962	0.040	0.93	-3.1	0.51
15	org41015_c	0.110	0.033	0.99	-0.7	0.57
16	org41016_c	-0.384	0.033	1.13	8.3	0.48
17	org41017_c	1.890	0.039	1.11	5.2	0.39
18	org41018_c	1.477	0.037	0.93	-4.2	0.56
19	org41019_c	-0.481	0.034	0.89	-7.2	0.63
20	org41020_c	-1.069	0.035	1.07	3.9	0.50
21	org41021_c	-0.403	0.033	0.93	-5.0	0.61
22	org41022_c	-1.969	0.041	1.16	6.5	0.39
23	org41023_c	1.735	0.038	1.02	0.9	0.48
24	org41024_c	-3.141	0.054	0.98	-0.5	0.34
25	org41025_c	2.920	0.050	1.07	2.2	0.31
26	org41026_c	-0.520	0.034	0.99	-0.8	0.57
27	org41027_c	-1.388	0.037	0.88	-6.5	0.58
28	org41028_c	0.985	0.034	1.13	8.1	0.45
29	org41029_c	-0.706	0.034	1.12	7.1	0.49
30	org41030_c	0.761	0.034	1.16	9.7	0.45
31	org41031_c	-0.997	0.035	0.92	-5.0	0.59
32	org41032_c	1.803	0.039	0.91	-4.8	0.55
33	org41033_c	0.768	0.034	1.06	3.6	0.52
34	org41034_c	-3.825	0.067	1.00	0.1	0.29
35	org41035_c	1.051	0.035	0.92	-4.8	0.59
36	org41036_c	1.213	0.035	0.99	-0.4	0.53
37	org41037_c	-1.976	0.041	1.06	2.5	0.44

Table 3

Structural-Unit Level Grade 4

	ITEM	STRUCTURAL UNIT*	ITEM DIFFICULTY ESTIMATE	SE	WEIGHTED FIT MNSQ	T	DISCRIMINATION ESTIMATE
1	org42001_c	pho	-4.382	0.086	0.99	-0.1	0.34
2	org42002_c	pho	-2.202	0.042	0.94	-2.5	0.51
3	org42003_c	pho	-4.121	0.078	0.95	-0.7	0.39
4	org42004_c	pho	-3.404	0.060	1.00	0.1	0.36
5	org42005_c	pho	-1.388	0.036	1.03	1.6	0.47
6	org42006_c	pho	-1.551	0.037	0.88	-6.2	0.58
7	org42007_c	pho	-2.829	0.050	1.03	0.8	0.39
8	org42008_c	pho	-2.393	0.045	1.07	2.6	0.38
9	org42009_c	pho	-1.327	0.036	0.87	-7.7	0.59
10	org42010_c	pho	-1.373	0.036	0.93	-3.9	0.54
11	org42011_c	pho	-3.988	0.074	0.93	-1.2	0.42
12	org42012_c	pho	-1.470	0.036	0.93	-3.8	0.54
13	org42013_c	pho	-1.369	0.036	1.04	2.1	0.47
14	org42014_c	pho	0.407	0.032	1.02	1.1	0.46
15	org42015_c	pho	-3.570	0.064	1.02	0.4	0.35
16	org42016_c	pho	-3.437	0.061	1.02	0.5	0.36
17	org42017_c	pho	-0.898	0.034	1.01	0.9	0.50
18	org42018_c	pho	-3.021	0.053	1.04	1.2	0.37
19	org42019_c	pho	-3.292	0.058	0.99	-0.3	0.37
20	org42020_c	pho	-2.313	0.044	0.99	-0.5	0.46
21	org42021_c	pho	-3.188	0.056	0.98	-0.4	0.40
22	org42022_c	pho	-4.702	0.098	0.97	-0.4	0.37
23	org42023_c	pho	-3.030	0.053	0.89	-3.2	0.50
24	org42024_c	pho	-3.924	0.072	0.99	-0.2	0.36
25	org42025_c	pho	-2.029	0.041	0.95	-2.2	0.50
26	org42026_c	pho	-3.514	0.063	1.06	1.3	0.33
27	org42027_c	pho	-3.397	0.060	0.96	-0.8	0.40
28	org42028_c	pho	-4.235	0.081	0.98	-0.4	0.36
29	org42029_c	pho	-3.837	0.070	0.99	-0.2	0.36
30	org42030_c	pho	-1.299	0.035	0.92	-4.8	0.55
31	org42031_c	pho	-4.222	0.081	0.91	-1.4	0.43
32	org42032_c	pho	-2.213	0.043	0.99	-0.2	0.46
33	org42033_c	mor	-1.832	0.039	0.89	-5.1	0.56
34	org42034_c	mor	-4.133	0.078	1.06	0.9	0.26
35	org42035_c	mor	-2.786	0.050	1.05	1.4	0.38
36	org42036_c	mor	1.240	0.035	1.02	1.4	0.37
37	org42037_c	mor	0.323	0.032	0.82	13.6	0.57
38	org42038_c	mor	-2.144	0.042	0.97	-1.2	0.48
39	org42039_c	mor	-3.808	0.069	0.92	-1.5	0.43
40	org42040_c	mor	0.258	0.032	1.04	3.3	0.45
41	org42041_c	mor	-0.351	0.032	0.98	-1.3	0.51
42	org42042_c	mor	-0.739	0.033	0.90	-7.0	0.57
43	org42043_c	mor	-1.650	0.038	1.19	8.9	0.34
44	org42044_c	mor	0.439	0.032	0.86	10.6	0.54
45	org42045_c	mor	-4.459	0.089	1.06	0.9	0.26
46	org42046_c	mor	0.094	0.032	0.97	-2.0	0.49
47	org42047_c	mor	-0.493	0.033	0.97	-2.3	0.52
48	org42048_c	mor	-2.177	0.042	0.96	-1.6	0.49
49	org42049_c	mor	-1.136	0.035	0.87	-8.4	0.59
50	org42050_c	mor	-3.292	0.058	1.09	2.1	0.28

51	org42051_c	mor	-3.666	0.066	1.08	1.5	0.27
52	org42052_c	mor	-0.499	0.033	0.97	-2.0	0.52
53	org42053_c	mor	-3.306	0.058	1.05	1.2	0.32
54	org42054_c	mor	0.678	0.033	1.11	7.5	0.37
55	org42055_c	mor	-1.576	0.037	0.90	-5.5	0.56
56	org42056_c	mor	-3.494	0.062	1.05	1.1	0.32
57	org42057_c	mor	-3.169	0.056	1.06	1.5	0.33
58	org42058_c	mor	-2.925	0.052	1.04	1.1	0.36
59	org42059_c	mor	-1.869	0.039	1.12	5.2	0.38
60	org42060_c	mor	0.871	0.034	1.00	-0.1	0.44
61	org42061_c	per	1.063	0.034	1.02	1.3	0.40
62	org42062_c	per	-0.064	0.032	0.89	-8.4	0.55
63	org42063_c	per	-2.821	0.050	1.11	3.1	0.31
64	org42064_c	per	1.351	0.036	0.93	-4.2	0.43
65	org42065_c	per	-0.957	0.034	0.95	-3.4	0.54
66	org42066_c	per	-0.052	0.032	0.97	-2.5	0.50
67	org42067_c	per	-1.721	0.038	0.97	-1.3	0.50
68	org42068_c	per	-1.945	0.040	0.90	-4.6	0.55
69	org42069_c	per	-1.123	0.035	0.95	-2.8	0.53
70	org42070_c	per	-0.986	0.034	0.90	-6.7	0.57
71	org42071_c	per	-1.713	0.038	0.87	-6.8	0.59
72	org42072_c	per	0.816	0.033	0.92	-5.2	0.48
73	org42073_c	per	-3.303	0.058	0.98	-0.4	0.39
74	org42074_c	per	-3.430	0.061	0.81	-4.5	0.55
75	org42075_c	per	0.258	0.032	1.02	1.3	0.47
76	org42076_c	der	-1.257	0.035	1.16	8.9	0.38
77	org42077_c	der	-3.010	0.053	1.04	1.2	0.35
78	org42078_c	der	-0.775	0.033	1.13	8.4	0.40
79	org42079_c	der	-1.371	0.036	1.07	3.7	0.44
80	org42080_c	der	-1.988	0.040	1.15	6.1	0.35
81	org42081_c	der	-4.097	0.077	1.03	0.6	0.31
82	org42082_c	der	-3.327	0.059	1.08	1.8	0.32
83	org42083_c	der	-3.502	0.062	1.06	1.2	0.32
84	org42084_c	der	0.773	0.033	0.99	-0.5	0.44
85	org42085_c	der	0.248	0.032	0.99	-0.6	0.47
86	org42086_c	der	-3.574	0.064	1.04	0.7	0.33
87	org42087_c	der	-3.114	0.055	1.07	1.9	0.33
88	org42088_c	der	-4.420	0.087	0.99	-0.1	0.33
89	org42089_c	der	0.615	0.033	1.13	8.7	0.37
90	org42090_c	der	-1.689	0.038	1.12	5.8	0.39
91	org42091_c	der	-4.276	0.083	1.00	0.0	0.32
92	org42092_c	der	-3.977	0.074	0.97	-0.5	0.37
93	org42093_c	der	-3.842	0.070	0.98	-0.3	0.38
94	org42094_c	der	0.824	0.033	1.15	9.4	0.36
95	org42095_c	der	-3.940	0.073	1.02	0.3	0.31
96	org42096_c	der	-1.642	0.038	0.97	-1.3	0.51
97	org42097_c	der	-2.389	0.044	0.94	-2.1	0.50
98	org42098_c	der	-2.844	0.050	1.12	3.5	0.29
99	org42099_c	der	-2.439	0.045	1.11	3.7	0.37
100	org42100_c	der	-3.108	0.055	1.04	1.1	0.34
101	org42101_c	der	-1.030	0.034	1.18	10.6	0.37
102	org42102_c	der	-0.953	0.034	1.07	4.1	0.45
103	org42103_c	der	-3.136	0.055	0.96	-1.0	0.42
104	org42104_c	der	-2.811	0.050	1.04	1.1	0.38
105	org42105_c	der	-2.328	0.044	1.05	1.7	0.42
106	org42106_c	der	-3.365	0.059	0.93	-1.7	0.43
107	org42107_c	der	-3.166	0.056	1.03	0.8	0.35

108	org42108_c	syn	-3.013	0.053	1.12	3.1	0.30
109	org42109_c	syn	-3.296	0.058	1.01	0.1	0.39
110	org42110_c	syn	-3.929	0.073	0.97	-0.4	0.38
111	org42111_c	syn	-4.016	0.075	1.06	1.0	0.28
112	org42112_c	syn	-1.781	0.039	1.08	3.9	0.41
113	org42113_c	syn	-3.249	0.057	1.05	1.2	0.36
114	org42114_c	syn	-2.819	0.050	1.03	0.9	0.40
115	org42115_c	syn	-2.031	0.041	1.03	1.2	0.45
116	org42116_c	syn	-2.484	0.046	1.04	1.5	0.40
117	org42117_c	syn	-3.246	0.057	1.12	2.7	0.30
118	org42118_c	syn	-1.966	0.040	1.11	4.5	0.38
119	org42119_c	syn	-3.096	0.055	0.96	-1.0	0.44
120	org42120_c	syn	-2.330	0.044	0.96	-1.6	0.49
121	org42121_c	syn	-3.490	0.062	0.96	-0.8	0.41
122	org42122_c	syn	-2.755	0.049	0.90	-3.1	0.52
123	org42123_c	syn	-3.093	0.054	0.93	-2.0	0.47
124	org42124_c	syn	-3.770	0.068	0.98	-0.4	0.37
125	org42125_c	syn	-2.909	0.051	0.95	-1.3	0.45
126	org42126_c	syn	-0.744	0.033	1.02	1.5	0.48
127	org42127_c	syn	-1.546	0.037	0.95	-2.8	0.53
128	org42128_c	syn	-3.775	0.069	0.93	-1.4	0.43
129	org42129_c	syn	-1.938	0.040	0.92	-3.8	0.54
130	org42130_c	syn	-1.860	0.039	0.93	-3.5	0.53

*Note: pho = phonographic syllabic subskills, mor = morphological subskills, per = peripheral subskills, der = derivational subskills, syn = syntactic subskills