



NEPS Working Papers

Inge Blatt, Sarah Frahm, & Stephan Jarsinski

NEPS Technical Report for Orthography – Scaling Results of Starting Cohort 3 in Fifth Grade

NEPS Working Paper No. 21

Bamberg, January 2013

SPONSORED BY THE



**Federal Ministry
of Education
and Research**

Working Papers of the German National Educational Panel Study (NEPS)

at the University of Bamberg

The NEPS Working Papers publish articles, expertises, and findings related to the German National Educational Panel Study (NEPS).

The NEPS Working Papers are edited by a board of researchers representing the wide range of disciplines covered by NEPS. The series started in 2011.

Papers appear in this series as work in progress and may also appear elsewhere. They often represent preliminary studies and are circulated to encourage discussion. Citation of such a paper should account for its provisional character.

Any opinions expressed in this series are those of the author(s) and not those of the NEPS consortium.

The NEPS Working Papers are available at

<http://www.uni-bamberg.de/neps/publikationen/neps-working-papers/>

Editorial Board:

Jutta Allmendinger, WZB Berlin

Cordula Artelt, University of Bamberg

Jürgen Baumert, MPIB Berlin

Hans-Peter Blossfeld, EUI Florence

Wilfried Bos, University of Dortmund

Edith Braun, HIS Hannover

Claus H. Carstensen, University of Bamberg

Henriette Engelhardt-Wölfler, University of Bamberg

Johannes Giesecke, University of Bamberg

Frank Kalter, University of Mannheim

Corinna Kleinert, IAB Nürnberg

Eckhard Klieme, DIPF Frankfurt

Cornelia Kristen, University of Bamberg

Wolfgang Ludwig-Mayerhofer, University of Siegen

Thomas Martens, DIPF Frankfurt

Manfred Prenzel, TU Munich

Susanne Rässler, University of Bamberg

Marc Rittberger, DIPF Frankfurt

Hans-Günther Roßbach, University of Bamberg

Hildegard Schaeper, HIS Hannover

Thorsten Schneider, University of Leipzig

Heike Solga, WZB Berlin

Petra Stanat, IQB Berlin

Volker Stocké, University of Kassel

Olaf Struck, University of Bamberg

Ulrich Trautwein, University of Tübingen

Jutta von Maurice, University of Bamberg

Sabine Weinert, University of Bamberg

Contact: German National Educational Panel Study (NEPS) – University of Bamberg –
96045 Bamberg – Germany – contact.neps@uni-bamberg.de

NEPS Technical Report for Orthography – Scaling Results of Starting Cohort 3 in Fifth Grade

Inge Blatt¹, Sarah Frahm¹ & Stephan Jarsinski²

¹University of Hamburg

²Technical University of Dortmund

E-Mail-Address of the lead author:

Inge.Blatt@uni-hamburg.de

Bibliographic Data:

Blatt, I., Frahm S., & Jarsinski, S. (2013): NEPS Technical Report for Orthography - Scaling Results of Starting Cohort 3 in Fifth Grade (NEPS Working Paper No. 21). Bamberg: Otto-Friedrich-Universität, Nationales Bildungspanel.

NEPS Technical Report for Orthography – Scaling Results of Starting Cohort 3 in Fifth Grade

Abstract

In the National Educational Panel Study (NEPS), the orthography competence is measured as a stage-specific supplement in secondary school from grade 5 to 9. In this paper, the test and its theoretical framework are introduced, followed by a description of the data, the data analysis and its results for the scientific use file for grade 5. The description's aim is to enable the scientific community to understand as well as to use the data adequately. Thereby, the paper seeks to clarify upcoming questions concerning the data and motivate potential users of the data to further analyze the data for the orthography competence in grade 5.

Key words

spelling competence, orthography

Content

1. Introduction.....	4
2. Testing Orthography Competence.....	4
3. Data	5
3.1 The design of the study.....	5
3.2 Sample.....	5
4. Analyses.....	5
4.1 Missing Responses	5
4.2 Scaling Model	5
4.3 Checking the Quality of the Test.....	6
5. Results	6
5.1 Parameter Estimates	6
5.1.1 Item parameter and person parameters	6
5.2 Reliability.....	9
6. Discussion.....	9
7. Data in the Scientific Use File.....	9

1. Introduction

Most competences are measured coherently across the life span in the National Educational Panel Study (NEPS), that is, reading, mathematics, and domain-general cognitive functioning. These competences are complemented by stage-specific measures that occur only in one specific stage. This is also true for the spelling competency which is measured only in stage 4 – from lower to upper secondary school.

The spelling test used in stage 4 had been 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 done 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 competence in starting cohort 3 – fifth grade. First, the theoretical framework and its realization are briefly described. Thereafter, the analyses of its results are explained. This is then followed by a discussion.

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 and for giving feedback to previous drafts of this paper.

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 test used in the National Educational Panel Study for grade 5.

The framework for all grades 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 (i.e., reality: #real #ity) are assigned to subskills leading to each subskill consisting of 30 to 60 structural units. The subskills usually correlate highly, but previous works have proven a five-dimensional model to be most adequate for modeling the data. 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 test used in grade 5 consisted of a cloze test and three full sentences. It was to be mastered within 25 minutes, and it included six pages. The test instructions and the test contents were played back from a CD which had been prerecorded with a professional speaker.

3. Data

3.1 The design of the study

For the main study in grade 5, no splits had been designed. This was due to the testing situation via CD. The entire test group took the test simultaneously. The test included 30 words in the cloze test and 40 words in the full sentences. Words which did not provide any information on orthography competence, such as “and”, were eliminated prior to the analyses. Therefore, the dataset used for the analyses consisted of 54 full words. Those 54 words translate into 233 structural units that 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 then entered into *Excel* by the IEA Data Processing Center (IEA DPC) and coded by a newly developed tool (SRT-Editor) in stage 4 (vgl. Frahm et al., 2011). The data analyses which are described in this paper were performed by stage 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 5,208 students in grade 5 from several school types in Germany. Students with special educational needs were not included.

4. Analyses

4.1 Missing Responses

Data are nearly complete for all cases and for all items. In case of a missing item response, the item was coded as false (0).¹

4.2 Scaling Model

For the data analyses, test data are first transcribed and then coded with special software developed for this test into dichotomous items (0 = wrong; 1 = right). 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 competence were estimated as weighted maximum likelihood estimates (WLEs, Warm, 1989).

Person parameter estimation in NEPS has been described in Pohl & Carstensen (2012a), while the data available in the SUF are described in section 7.

¹ In order to keep missings caused by item positioning to a minimum the missings were analyzed in detail in the developmental study for NEPS. The results showed that the testing time was the main cause for missings. After adjusting the testing time, the number of missings in the main study was reduced to less than 3 percent. The missings have been coded as 0 (incorrect) due to the automatic coding program in accordance to all studies in which the SRT was conducted. For the reasons mentioned this procedure differs from other tests of the NEPS.

4.3 Checking the Quality of the Test

The spelling test had been specifically constructed to be implemented in NEPS. In order to ensure appropriate psychometric properties, the quality of the test was checked. 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 student ability and item difficulty, some misfit items had to be removed (4 of 54 items at whole-word level and 49 of 233 items at structural-unit level), 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).

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.

At whole-word level and structural-unit level, item fit has removed misfit items not over 1.20. In terms of item difficulty, it can be seen that the test still offers easy as well as difficult items within the range of -3 and 3 for the whole-word level (see Figure 1) and within the range of 4 and 2 for the structural-unit level (see Figure 2). Compared with the whole word, the structure units are, in total, a little bit easier. Students correctly solve more structural-unit items than whole-word items. All in all, student ability is high overall.

Map of Item Difficulty and Student Ability

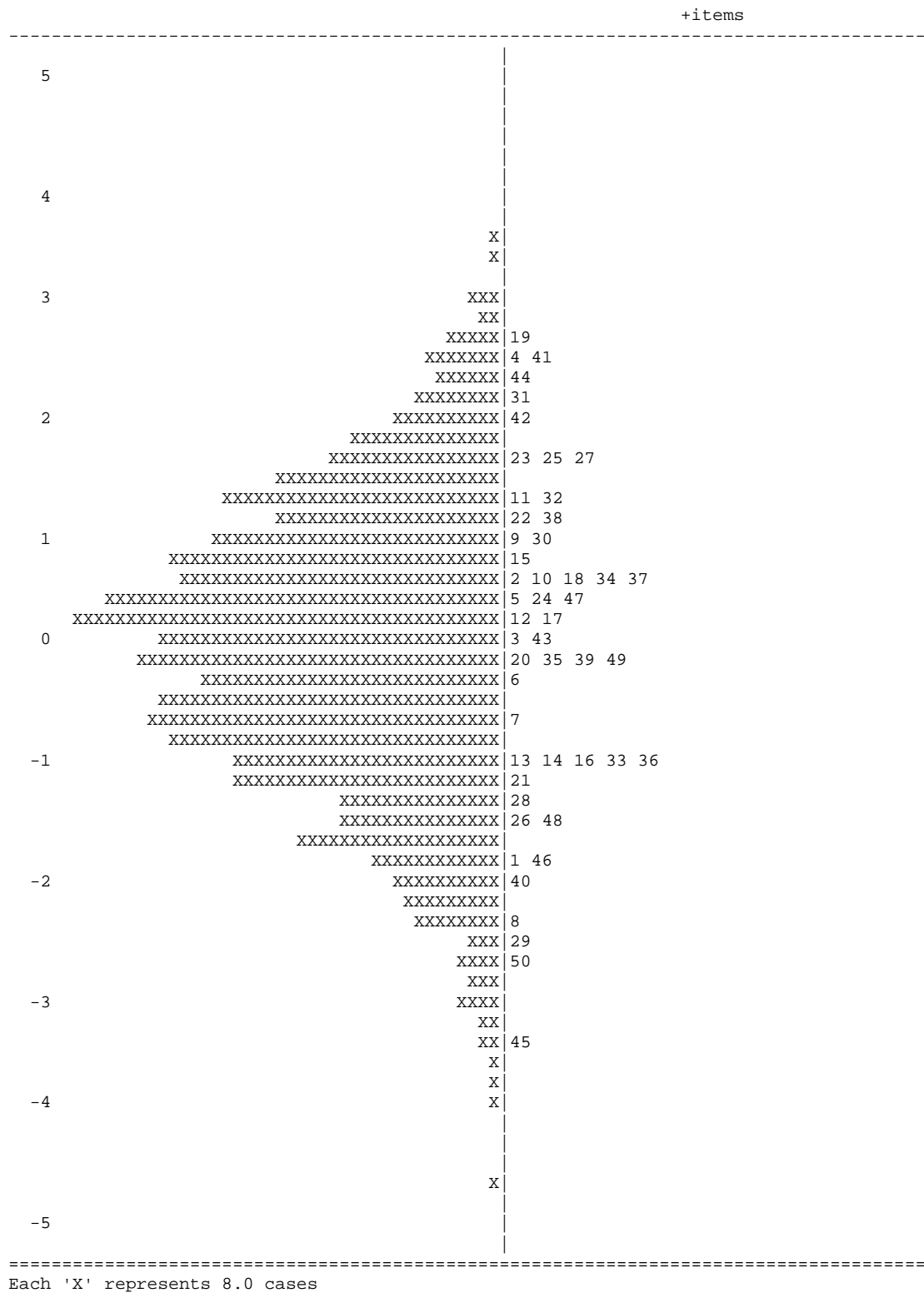


Figure 1: Whole-word level

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard deviation	Variance
org5_sc1a	5208	199,85	800,13	500,00	100,00	10000,00
org5_sc1b	5208	-5,68	4,45	-,0130	1,37530	1,891
org5_sc2b	5208	,34	1,51	,3756	,07688	,006
org5_sc1c	5208	199,72	800,25	500,00	100,00	10000,00
org5_sc1d	5208	-8,70	4,73	-,1080	1,18016	1,393
org5_sc2d	5208	,17	1,44	,2402	,08172	,007

The variables org5_sc1a and org5_sc1c are the standardized estimated student ability at the whole-word and structural-unit level, with a mean of 500 and a standard deviation of 100 as in the PIRLS study. The raw (non-standardized) estimated student ability from ConQuest is represented by the variables org5_sc1b and org5_sc1d with the standard error in terms of org5_sc2b and org5_sc2d. It can be transformed according to the needs of the researcher.

5.2 Reliability

The reliability (EAP/PV) at the whole-word level and at structural-unit level is, in both cases, 0.929. In terms of the high value, one can assume that the test is reliable.

6. Discussion

The test has proven to be reliable after item elimination due to 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 competence. 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 234 items in the data set that are either scored as dichotomous variables with 0 indicating an incorrect response and 1 indicating a correct response. Manifest scale scores

are provided in the form of WLE estimates (org5_sc1) including the corresponding standard error (org5_sc2). The ConQuest Syntax for estimating the WLE scores from the items is provided in appendix X.

Plausible values that allow for an investigation of latent relationships of competence scores with other variables will be provided in later data releases. Alternatively, users interested in investigating latent relationships 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).

References

- Blatt, I., Voss, A., Kowalski, K., & Jarsinski, S. (2011). Messung von Rechtschreibleistung und empirische Kompetenzmodellierung. In U. Bredel (Hg.). Weiterführender Orthographieunterricht (pp. 226-56). Baltmannsweiler: Schneider Verlag Hohengehren.
- Frahm, S., Goy, M., Kowalski, K., Sixt, M., Strietholt, R., Blatt, I., Bos, W., & Kandera, M. (2011). Transition and development from lower secondary to upper secondary school. In H.-P. Blossfeld, H.-G. Rossbach & J. von Maurice (Eds.). *Education as a lifelong process. The German National Educational Panel Study (NEPS). Zeitschrift für Erziehungswissenschaft, Sonderheft 14*, 217-32.
- Haberkorn, K., Pohl, S., Hardt, K., & Wiegand, E. (2012). NEPS Technical Report for Reading – Scaling Results of Starting Cohort 4 in Ninth Grade (NEPS Working Paper No. 16). Bamberg: Otto-Friedrich-Universität, Nationales Bildungspanel.
- Jarsinski, S. (2010). Längsschnittanalyse der Rechtschreibentwicklung von Fünftklässlern mit Daten aus der Ergänzungsstudie Orthographie des Hamburger Leseförderprojekts 2007/08 (HeLp): Auswertung der Kontrollklassen. Diplomarbeit. TU Dortmund.
- OECD (2005). *PISA 2003 Technical Report*. OECD, Paris 2005.
- Pohl, S. & Carstensen, C. H. (2012a). NEPS Technical Report – Scaling the Data of the Competence Tests (NEPS Working Paper No. 14). Bamberg: Otto-Friedrich-Universität, Nationales Bildungspanel.
- Pohl, S. & Carstensen, C. H. (2012b). Scaling the competence tests in the National Educational Panel Study – Many questions, some answers, and further challenges. Manuscript submitted for publication.
- Pohl, S., Haberkorn, K., Hardt, K., & Wiegand, E. (2012). NEPS Technical Report for Reading – Scaling Results of Starting Cohort 3 in Fifth Grade (NEPS Working Paper No. 15). Bamberg: Otto-Friedrich-Universität, Nationales Bildungspanel.
- Rasch, G. 1960. *Probabilistic Models for Some Intelligence and Attainment Tests*. Chicago: University of Chicago Press.
- Voss, A., Blatt, I., & Kowalski, K. (2007). Zur Erfassung orthographischer Kompetenz in IGLU 2006. In: *Didaktik Deutsch*, 23, 15-33.
- Wu, M.L., Adams, R.J., & Wilson, M.R. (1997). *ACER Conquest: Generalised item response modelling software*. Melbourne: ACER Press.

Item Parameters and Item Fit

Table 1 and 2 represent the estimated item parameters for each item on the whole-word level and the structural-unit level. In the first two columns there are the item numbers and the item names. Columns three and four represent 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 there is the discrimination of the items.

Table 2: Whole-word level

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	
1	org51001_c	-1.920	0.040	1.04	1.8	0.38
2	org51002_c	0.667	0.033	1.07	4.8	0.45
3	org51003_c	0.114	0.032	0.95	-3.6	0.56
4	org51004_c	2.565	0.047	0.94	-1.9	0.40
5	org51005_c	0.473	0.032	0.94	-4.2	0.55
6	org51006_c	-0.267	0.032	0.93	-5.5	0.57
7	org51007_c	-0.550	0.033	1.04	2.9	0.48
8	org51008_c	-2.446	0.045	1.04	1.5	0.36
9	org51009_c	1.043	0.034	0.94	-3.7	0.52
10	org51010_c	0.569	0.033	0.96	-3.0	0.54
11	org51011_c	1.284	0.035	0.98	-1.4	0.48
12	org51012_c	0.215	0.032	0.97	-2.1	0.54
13	org51013_c	-0.959	0.034	1.00	0.1	0.50
14	org51014_c	-1.004	0.034	1.09	5.3	0.43
15	org51015_c	0.803	0.033	0.87	-9.4	0.59
16	org51016_c	-0.934	0.034	0.88	-7.7	0.58
17	org51017_c	0.213	0.032	1.06	4.1	0.48
18	org51018_c	0.654	0.033	0.95	-3.9	0.55
19	org51019_c	2.636	0.048	1.03	0.8	0.33
20	org51020_c	-0.105	0.032	0.93	-5.3	0.57
21	org51021_c	-1.074	0.035	1.14	8.0	0.39
22	org51022_c	1.194	0.035	1.17	9.7	0.34
23	org51023_c	1.606	0.037	0.96	-2.3	0.48
24	org51024_c	0.437	0.032	0.92	-6.1	0.57
25	org51025_c	1.583	0.037	0.92	-4.5	0.51
26	org51026_c	-1.467	0.037	0.92	-4.2	0.52
27	org51027_c	1.725	0.038	0.97	-1.4	0.45
28	org51028_c	-1.301	0.036	0.96	-2.3	0.51
29	org51029_c	-2.552	0.047	1.09	3.1	0.31
30	org51030_c	0.879	0.033	1.04	2.4	0.47
31	org51031_c	2.240	0.043	0.92	-3.4	0.44
32	org51032_c	1.377	0.036	0.96	-2.3	0.48
33	org51033_c	-0.976	0.034	0.94	-3.9	0.54
34	org51034_c	0.614	0.033	1.03	2.0	0.49
35	org51035_c	-0.063	0.032	1.09	6.1	0.45
36	org51036_c	-0.954	0.034	1.18	10.7	0.38
37	org51037_c	0.564	0.033	1.07	4.9	0.45
38	org51038_c	1.098	0.034	1.15	9.3	0.36
39	org51039_c	-0.015	0.032	1.01	0.6	0.52
40	org51040_c	-2.033	0.041	0.93	-3.0	0.47
41	org51041_c	2.591	0.047	0.95	-1.6	0.37
42	org51042_c	2.100	0.041	0.92	-3.6	0.47
43	org51043_c	0.011	0.032	1.01	0.8	0.51

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	
44	org51044_c	2.362	0.044	1.01	0.3	0.36
45	org51045_c	-3.482	0.063	1.03	0.6	0.27
46	org51046_c	-1.791	0.039	0.96	-2.0	0.48
47	org51047_c	0.404	0.032	0.98	-1.2	0.52
48	org51048_c	-1.452	0.037	1.18	8.8	0.34
49	org51049_c	-0.182	0.032	0.98	-1.5	0.54
50	org51050_c	-2.761	0.050	0.99	-0.4	0.36

Table 3: Structural-unit level

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	ESTIMATE
1	org52001_c	-2.495	0.046	1.06	2.0	0.31
2	org52002_c	0.534	0.032	1.01	0.8	0.40
3	org52003_c	-4.293	0.088	1.02	0.3	0.27
4	org52004_c	-3.035	0.054	1.04	0.9	0.31
5	org52005_c	-2.715	0.049	1.04	1.3	0.31
6	org52006_c	-3.377	0.061	1.00	0.0	0.33
7	org52007_c	-2.202	0.042	0.89	-4.3	0.51
8	org52008_c	-2.661	0.048	0.97	-0.8	0.40
9	org52009_c	-2.214	0.042	0.95	-1.8	0.45
10	org52010_c	0.670	0.032	1.06	4.3	0.35
11	org52011_c	-3.308	0.060	1.05	1.2	0.27
12	org52012_c	-2.143	0.041	1.01	0.3	0.39
13	org52013_c	-0.481	0.032	1.01	0.9	0.44
14	org52014_c	-3.523	0.064	1.02	0.4	0.30
15	org52015_c	-2.980	0.053	0.99	-0.3	0.36
16	org52016_c	-3.687	0.069	1.01	0.3	0.30
17	org52017_c	-1.537	0.036	0.99	-0.3	0.44
18	org52018_c	-3.847	0.073	0.99	-0.1	0.32
19	org52019_c	-3.682	0.069	1.00	-0.1	0.32
20	org52020_c	-0.973	0.033	1.10	6.5	0.36
21	org52021_c	-2.473	0.045	1.04	1.3	0.34
22	org52022_c	-3.821	0.072	0.98	-0.3	0.34
23	org52023_c	-3.089	0.055	1.02	0.6	0.32
24	org52024_c	-1.825	0.038	0.95	-2.3	0.47
25	org52025_c	-2.097	0.041	0.95	-2.0	0.45
26	org52026_c	-1.343	0.035	1.11	5.9	0.35
27	org52027_c	-3.193	0.057	0.94	-1.4	0.41
28	org52028_c	-2.059	0.040	0.94	-2.4	0.47
29	org52029_c	-3.412	0.062	0.92	-1.8	0.43
30	org52030_c	-2.320	0.043	1.07	2.6	0.31
31	org52031_c	-3.853	0.073	0.96	-0.7	0.38
32	org52032_c	-2.622	0.047	0.94	-1.8	0.44
33	org52033_c	-3.745	0.070	0.94	-1.1	0.40
34	org52034_c	-3.498	0.064	0.97	-0.6	0.37
35	org52035_c	-3.565	0.066	0.93	-1.3	0.41
36	org52036_c	-1.979	0.040	0.89	-4.9	0.52
37	org52037_c	-3.755	0.070	0.94	-1.1	0.40
38	org52038_c	-3.032	0.054	0.92	-2.2	0.45
39	org52039_c	-2.629	0.047	0.92	-2.5	0.47
40	org52040_c	-2.898	0.052	1.03	0.9	0.31
41	org52041_c	-0.859	0.033	1.12	8.4	0.33
42	org52042_c	-0.060	0.031	0.98	-1.5	0.44
43	org52043_c	-1.099	0.033	0.88	-8.0	0.55
44	org52044_c	-1.844	0.038	1.12	5.1	0.31
45	org52045_c	-2.755	0.049	1.03	0.9	0.34
46	org52046_c	-0.807	0.032	1.13	9.1	0.33
47	org52047_c	-0.389	0.031	1.02	1.9	0.42
48	org52048_c	-1.606	0.036	0.99	-0.5	0.44
49	org52049_c	-2.589	0.047	1.08	2.6	0.28
50	org52050_c	-2.091	0.041	0.92	-3.3	0.49
51	org52051_c	-1.853	0.038	1.15	6.4	0.27
52	org52052_c	-0.926	0.033	1.18	12.0	0.28
53	org52053_c	-0.670	0.032	0.87	10.1	0.55

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	ESTIMATE
54	org52054_c	-1.061	0.033	0.95	-3.5	0.49
55	org52055_c	-4.691	0.104	1.03	0.3	0.27
56	org52056_c	-3.913	0.075	1.02	0.4	0.27
57	org52057_c	-2.848	0.051	1.00	0.1	0.37
58	org52058_c	0.260	0.031	0.99	-1.0	0.42
59	org52059_c	-1.419	0.035	0.96	-2.2	0.48
60	org52060_c	-0.945	0.033	0.91	-6.4	0.53
61	org52061_c	-1.982	0.040	1.05	2.1	0.37
62	org52062_c	-1.683	0.037	1.10	4.6	0.34
63	org52063_c	-2.715	0.049	0.99	-0.2	0.37
64	org52064_c	-2.261	0.043	0.90	-4.0	0.50
65	org52065_c	0.126	0.031	1.05	3.8	0.40
66	org52066_c	-1.133	0.034	0.96	-2.6	0.48
67	org52067_c	-2.438	0.045	0.99	-0.2	0.39
68	org52068_c	-2.157	0.041	1.00	-0.2	0.41
69	org52069_c	0.248	0.031	1.03	2.7	0.39
70	org52070_c	-3.176	0.057	0.99	-0.2	0.34
71	org52071_c	-2.448	0.045	0.90	-3.6	0.49
72	org52072_c	-3.891	0.074	0.96	-0.7	0.37
73	org52073_c	-1.953	0.039	1.00	0.1	0.41
74	org52074_c	-3.236	0.058	0.96	-0.8	0.37
75	org52075_c	-1.454	0.035	1.05	2.9	0.39
76	org52076_c	-2.787	0.050	0.99	-0.2	0.37
77	org52077_c	-1.920	0.039	0.99	-0.4	0.43
78	org52078_c	-1.477	0.036	1.07	3.9	0.37
79	org52079_c	0.090	0.031	1.06	4.5	0.38
80	org52080_c	-1.113	0.034	0.89	-7.0	0.54
81	org52081_c	0.634	0.032	0.92	-6.1	0.45
82	org52082_c	-0.326	0.031	0.94	-4.8	0.49
83	org52083_c	-3.400	0.062	1.05	1.1	0.26
84	org52084_c	-0.338	0.031	0.91	-7.5	0.52
85	org52085_c	-2.165	0.042	0.93	-2.9	0.48
86	org52086_c	-0.374	0.031	0.91	-7.8	0.52
87	org52087_c	-0.779	0.032	0.96	-3.2	0.48
88	org52088_c	-2.792	0.050	0.95	-1.6	0.42
89	org52089_c	-2.017	0.040	1.00	-0.1	0.42
90	org52090_c	0.682	0.032	0.88	-9.3	0.49
91	org52091_c	-1.487	0.036	0.88	-7.0	0.55
92	org52092_c	-0.209	0.031	0.87	10.9	0.54
93	org52093_c	-1.113	0.034	1.12	7.5	0.34
94	org52094_c	-2.693	0.048	0.92	-2.4	0.45
95	org52095_c	-1.142	0.034	1.03	1.8	0.42
96	org52096_c	-0.041	0.031	0.90	-8.4	0.51
97	org52097_c	-0.958	0.033	1.06	3.9	0.41
98	org52098_c	-3.326	0.060	0.93	-1.5	0.41
99	org52099_c	1.768	0.039	1.02	0.9	0.29
100	org52100_c	-3.466	0.063	0.90	-2.0	0.44
101	org52101_c	-1.844	0.038	0.91	-4.4	0.51
102	org52102_c	-1.169	0.034	1.06	3.9	0.39
103	org52103_c	-2.248	0.042	1.08	2.9	0.32
104	org52104_c	-3.138	0.056	1.07	1.6	0.26
105	org52105_c	-3.609	0.067	1.04	0.7	0.27
106	org52106_c	-2.843	0.051	1.07	1.8	0.28
107	org52107_c	-2.835	0.051	1.04	1.2	0.30
108	org52108_c	-4.747	0.106	1.03	0.3	0.28

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	ESTIMATE
109	org52109_c	-1.978	0.040	0.93	-3.1	0.48
110	org52110_c	-1.620	0.037	0.99	-0.4	0.44
111	org52111_c	-0.958	0.033	1.00	0.2	0.45
112	org52112_c	-1.649	0.037	0.92	-4.0	0.50
113	org52113_c	-2.054	0.040	0.92	-3.3	0.49
114	org52114_c	-1.647	0.037	1.10	5.1	0.33
115	org52115_c	-3.038	0.054	1.04	1.0	0.30
116	org52116_c	-3.622	0.067	1.04	0.8	0.26
117	org52117_c	-2.275	0.043	1.07	2.5	0.32
118	org52118_c	0.194	0.031	1.14	11.1	0.31
119	org52119_c	-1.417	0.035	1.04	2.5	0.39
120	org52120_c	-2.352	0.044	1.03	1.1	0.36
121	org52121_c	-2.432	0.045	1.02	0.7	0.37
122	org52122_c	-1.466	0.036	1.17	8.7	0.28
123	org52123_c	-0.590	0.032	1.05	3.6	0.40
124	org52124_c	-0.385	0.031	1.08	6.1	0.38
125	org52125_c	-1.603	0.036	1.10	4.9	0.34
126	org52126_c	-0.761	0.032	0.93	-5.0	0.50
127	org52127_c	-0.749	0.032	0.95	-3.5	0.48
128	org52128_c	-0.528	0.032	1.08	6.2	0.37
129	org52129_c	-2.188	0.042	1.04	1.6	0.37
130	org52130_c	-2.625	0.047	0.99	-0.3	0.39
131	org52131_c	-1.933	0.039	1.09	4.0	0.32
132	org52132_c	-4.512	0.096	1.01	0.2	0.29
133	org52133_c	-0.821	0.032	1.03	2.3	0.41
134	org52134_c	-2.645	0.048	0.98	-0.6	0.39
135	org52135_c	-2.028	0.040	1.07	2.8	0.35
136	org52136_c	0.068	0.031	1.11	8.5	0.36
137	org52137_c	-4.240	0.086	1.01	0.2	0.29
138	org52138_c	-0.421	0.031	1.01	0.5	0.43
139	org52139_c	-2.174	0.042	0.91	-3.6	0.50
140	org52140_c	-1.654	0.037	0.94	-3.0	0.49
141	org52141_c	-2.833	0.051	1.08	2.2	0.26
142	org52142_c	-3.466	0.063	0.93	-1.5	0.41
143	org52143_c	-1.268	0.034	1.12	7.1	0.34
144	org52144_c	-1.279	0.034	1.07	3.9	0.38
145	org52145_c	-2.309	0.043	0.91	-3.4	0.48
146	org52146_c	-2.006	0.040	0.99	-0.5	0.42
147	org52147_c	-3.618	0.067	0.92	-1.6	0.43
148	org52148_c	-0.618	0.032	1.07	5.2	0.40
149	org52149_c	-1.585	0.036	1.11	5.3	0.33
150	org52150_c	-3.446	0.063	0.93	-1.5	0.42
151	org52151_c	-2.823	0.050	0.97	-0.8	0.39
152	org52152_c	-2.246	0.042	1.02	0.7	0.38
153	org52153_c	-2.216	0.042	1.12	4.5	0.28
154	org52154_c	-3.609	0.067	1.00	-0.0	0.33
155	org52155_c	-4.340	0.089	1.00	0.0	0.31
156	org52156_c	-2.631	0.047	1.06	2.0	0.30
157	org52157_c	-3.614	0.067	1.01	0.3	0.30
158	org52158_c	-2.684	0.048	1.06	1.9	0.30
159	org52159_c	-2.773	0.050	1.01	0.4	0.35
160	org52160_c	-2.506	0.046	0.96	-1.2	0.43
161	org52161_c	-3.253	0.058	1.04	0.9	0.29
162	org52162_c	-0.861	0.033	1.10	6.7	0.36
163	org52163_c	-4.247	0.086	0.99	-0.0	0.33

	ITEM	ITEM DIFFICULTY		WEIGHTED FIT		DISCRIMINATION
		ESTIMATE	SE	MNSQ	T	ESTIMATE
164	org52164_c	-3.157	0.056	1.07	1.6	0.27
165	org52165_c	-1.919	0.039	0.98	-1.1	0.44
166	org52166_c	-2.107	0.041	1.02	1.0	0.39
167	org52167_c	-0.387	0.031	1.17	13.1	0.29
168	org52168_c	-3.760	0.071	0.95	-0.9	0.39
169	org52169_c	-2.950	0.053	0.96	-1.1	0.41
170	org52170_c	-4.233	0.086	0.99	-0.1	0.32
171	org52171_c	-3.486	0.064	0.94	-1.2	0.40
172	org52172_c	0.784	0.033	1.06	4.0	0.32
173	org52173_c	0.897	0.033	0.99	-0.4	0.36
174	org52174_c	-1.967	0.040	1.12	5.2	0.27
175	org52175_c	-1.384	0.035	1.03	1.7	0.41
176	org52176_c	-3.298	0.059	0.95	-1.0	0.39
177	org52177_c	-4.285	0.087	0.98	-0.2	0.34
178	org52178_c	-3.116	0.056	0.94	-1.4	0.41
179	org52179_c	-1.237	0.034	0.95	-3.2	0.49
180	org52180_c	-0.646	0.032	0.99	-0.6	0.45
181	org52181_c	-3.701	0.069	0.95	-0.9	0.38
182	org52182_c	-1.723	0.037	1.03	1.5	0.40
183	org52183_c	-2.335	0.044	0.87	-4.8	0.53
184	org52184_c	-2.741	0.049	1.05	1.4	0.30