Supplementary Materials S2

Descriptive Statistics for Linguistic Complexity Measures Across Writing Tasks

Linguistic complexity	Measures		Task 1		Task 2		Task 3		Task 4	
	Type	Code	M	SD	M	SD	M	SD	M	SD
Syntactic complexity	Length of production unit	Mean length of clause (MLC)	7.348	0.857	7.354	1.118	7.399	0.975	7.631	1.013
		Mean length of sentence (MLS)	15.196	3.125	15.508	3.861	16.045	3.704	16.731	4.036
		Mean length of T-unit (MLT)	13.798	2.687	13.741	2.969	14.010	2.812	14.546	2.753
	Subordination	T-unit complexity ratio (C/T)	1.887	0.365	1.874	0.334	1.906	0.363	1.920	0.370
		Complex T-unit ratio (CT/T)	0.551	0.143	0.555	0.133	0.561	0.167	0.550	0.161
		Dependent clause ratio (DC/C)	0.416	0.083	0.418	0.077	0.424	0.099	0.416	0.092
		Dependent clauses per T-unit (DC/T)	0.807	0.329	0.802	0.267	0.839	0.330	0.825	0.330
	Coordination	Coordinate phrases per T-unit (CP/T)	0.274	0.151	0.259	0.155	0.287	0.172	0.293	0.179
		Coordinate phrases per clause (CP/C)	0.149	0.085	0.138	0.081	0.152	0.085	0.154	0.093
		Sentence coordina-tion ratio (T/S)	1.104	0.119	1.129	0.140	1.149	0.175	1.150	0.176
	Particular structures	Complex nominals per clause (CN/C)	0.710	0.177	0.733	0.198	0.713	0.169	0.716	0.187
		Complex nominals per T-unit (CN/T)	1.407	0.418	1.458	0.441	1.301	0.449	1.281	0.421
		Verb phrases per T-unit (VP/T)	2.306	0.465	2.259	0.419	2.325	0.433	2.324	0.463
	Sentence complexity	Sentence complexity ratio (C/S)	2.077	0.410	2.116	0.475	2.186	0.513	2.204	0.514
Lexical complexity	Lexical density	Lexical Density (LD)	0.499	0.032	0.492	0.031	0.502	0.031	0.503	0.026
	Lexical sophistication	Lexical Sophistication1 (LS1)	0.284	0.056	0.259	0.063	0.262	0.055	0.248	0.053
		Lexical Sophistication2 (LS2)	0.173	0.034	0.174	0.036	0.176	0.031	0.172	0.378
		Verb Sophistication 1 (VS1)	0.116	0.066	0.102	0.060	0.113	0.063	0.119	0.061
		Corrected VS1 (CVS1)	0.431	0.243	0.361	0.214	0.414	0.224	0.425	0.221
		Verb Sophistication 2 (VS2)	0.489	0.470	0.350	0.368	0.442	0.391	0.459	0.421
	Lexical variation	Number of Different Words (NDW)	112.677	24.454	106.388	24.520	116.860	26.556	111.318	23.399
		NDW (first 50 words) (NDW-50)	33.409	3.398	35.047	3.327	35.452	3.484	35.529	3.594
		NDW (expected random 50) (NDWER50)	37.007	1.982	36.991	2.049	37.372	1.760	37.091	1.973
		NDW(expected sequence 50) (NDWES50)	36.944	2.184	37.046	2.079	37.301	2.071	37.271	1.989
		Type-Token Ratio (TTR)	0.457	0.057	0.469	0.056	0.463	0.057	0.454	0.060
		Mean Segmental TTR (50) (MSTTR-50)	0.728	0.041	0.732	0.044	0.745	0.041	0.740	0.039
		Corrected TTR (CTTR)	5.030	0.581	4.945	0.597	5.143	0.578	4.984	0.574
		Root TTR (RTTR)	7.113	0.822	6.993	0.844	7.274	0.817	7.049	0.812

Bilogarithmic TTR (LogTTR)	0.857	0.020	0.858	0.019	0.859	0.019	0.855	0.021
Uber Index (UBER)	16.871	2.093	16.908	2.346	17.245	2.058	16.740	2.293
Lexical Word Variation (LV)	0.723	0.108	0.728	0.101	0.712	0.101	0.705	0.111
Verb Variation-I (VV1)	14.989	5.704	13.465	4.734	14.122	5.143	12.829	4.744
Squared VV1 (SVV1)	2.688	0.523	2.552	0.468	2.614	0.484	2.491	0.465
Corrected VV1 (CVV1)	0.609	0.075	0.620	0.081	0.616	0.075	0.603	0.081
Verb Variation-II (VV2)	0.160	0.033	0.164	0.035	0.154	0.031	0.144	0.030
Noun Variation (NV)	0.556	0.088	0.561	0.093	0.570	0.098	0.530	0.088
Adjective Variation (AdjV)	0.129	0.028	0.131	0.029	0.137	0.028	0.132	0.033
Adverb Variation (AdvV)	0.092	0.024	0.089	0.024	0.096	0.027	0.092	0.026
Modifier Variation (ModV)	0.222	0.037	0.220	0.037	0.233	0.040	0.225	0.043

The main and interactive effects of number of elements and prior knowledge on linguistic complexity

Linguistic complexity	Measures		Number of elements			Prior knowledge			Number of elements * Prior knowledge		
	Type	Code	F	df	p	F	df	p	F	df	p
Syntactic complexity	Length of production unit	MLC	3.230	1	0.074	1.031	1	0.311	1.520	1	0.219
		MLS	8.518	1	0.004*	1.384	1	0.241	0.277	1	0.599
		MLT	3.382	1	0.068	0.569	1	0.452	1.150	1	0.285
	Subordination	C/T	0.873	1	0.351	0.000	1	0.989	0.141	1	0.707
		CT/T	0.023	1	0.880	0.043	1	0.836	0.270	1	0.604
		DC/C	0.147	1	0.702	0.063	1	0.802	0.387	1	0.535
		DC/T	0.796	1	0.373	0.073	1	0.787	0.019	1	0.891
	Coordination	CP/T	2.125	1	0.147	0.067	1	0.796	0.426	1	0.515
		CP/C	1.295	1	0.257	0.193	1	0.661	0.570	1	0.451
		T/S	4.399	1	0.037*	0.531	1	0.467	0.606	1	0.437
	Particular structures	CN/C	0.137	1	0.711	0.383	1	0.537	0.321	1	0.571
		CN/T	10.186	1	0.002*	0.105	1	0.746	0.643	1	0.424
		VP/T	0.970	1	0.326	0.217	1	0.642	0.293	1	0.589
	Sentence complexity	C/S	4.739	1	0.031*	0.266	1	0.607	0.053	1	0.818
Lexical complexity	Lexical density	LD	5.617	1	0.019*	0.858	1	0.355	1.734	1	0.190
	Lexical sophistication	LS1	7.724	1	0.006*	10.754	1	0.001*	0.792	1	0.375
		LS2	0.016	1	0.900	0.168	1	0.683	0.585	1	0.445
		VS1	1.249	1	0.265	0.273	1	0.602	2.831	1	0.094
		CVS1	1.194	1	0.276	1.252	1	0.265	3.614	1	0.059
		VS2	0.581	1	0.447	1.649	1	0.201	3.800	1	0.053
	Lexical variation	NDW	6.074	1	0.015*	3.357	1	0.069	0.041	1	0.840
		NDW-50	13.461	1	0.000*	4.913	1	0.028*	5.141	1	0.025*
		NDWER50	1.591	1	0.209	0.435	1	0.510	0.518	1	0.473
		NDWES50	2.130	1	0.146	0.022	1	0.883	0.110	1	0.740
		TTR	1.090	1	0.298	0.045	1	0.833	5.050	1	0.026*
		CTTR	2.540	1	0.113	2.779	1	0.097	0.602	1	0.439

		RTTR	2.535	1	0.113	2.794	1	0.096	0.559	1	0.440
		MSTTR-50	9.436	1	0.002*	0.059	1	0.809	1.197	1	0.275
		LOGTTR	0.034	1	0.854	0.236	1	0.628	3.318	1	0.070
		UBER	0.327	1	0.568	0.719	1	0.398	2.246	1	0.136
		LV	0.786	1	0.706	0.745	1	0.389	0.189	1	0.665
		VV1	3.197	1	0.075	4.817	1	0.029*	0.076	1	0.783
		SVV1	2.881	1	0.091	4.487	1	0.036*	0.026	1	0.871
		CVV1	0.517	1	0.473	0.008	1	0.928	3.725	1	0.055
		VV2	19.440	1	0.000*	0.618	1	0.433	5.478	1	0.020*
		NV	1.068	1	0.303	2.525	1	0.114	7.691	1	0.006*
		AdjV	2.881	1	0.091	0.166	1	0.684	1.337	1	0.249
		AdvV	1.716	1	0.192	1.671	1	0.198	0.094	1	0.760
		ModV	3.570	1	0.060	1.331	1	0.250	0.650	1	0.421