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The effects of in-class planning on writing assignments

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This study investigates the potential effects of modes of writing and of in-class planning conditions on the quality of the language of writing assignments. The writings of beginning level students were collected; the writings were written in two modes, expository or persuasive and narrative, with three in-class planning conditions, L1 brainstorming, meaning-focused planning, and form-focused planning. Students tend to write more fluently and with more complexity but with less accuracy in an expository or persuasive mode than in a narrative mode. L1 brainstorming contributes to fluency, lexical variety, and clause-level accuracy, but not to syntactic complexity, whereas form-focused planning and meaning-focused planning contribute to word-level accuracy and complexity. Students with lower proficiency levels are more susceptible to planning conditions; therefore, planning conditions should be carefully balanced for beginning students.

初級レベルの日本人大学生に対して教室内活動が英作文宿題の言語に与える影響が検証された。英作文は語り文と説明または説得文の二つのモードによって, 日本語でのブレインストーミング活動, 意味に焦点を当てた作業, 形式に焦点を当てた作業の三つの教室内活動後に書かれた。言語の流暢さ, 正確さ, 複雑さを分析した結果, 説明または説得文では流暢さと複雑さの増加をみる一方で正確さの減少がみられた。日本語でのブレインストーミング活動は流暢さ, 語彙の種類, 節レベルの正確さに関与したものの統語複雑性には関与しなかった。意味または形式に焦点を当てた作業は語レベルの正確さと複雑さに関与した。さらに同じ初級レベルの学生間でも語彙レベルや文法力の違いによって教室内活動から受ける影響が異なり, 特にレベルの低い学生がそれらの活動の影響を受け易い事が検証された。特にレベルの低い学生に対しては種々の教室内活動がバランスよく提供される事が大切であるといえる。

The main purpose of this study is to investigate whether beginning level L2 students produce writing products with different language quality when they write in different modes with different planning conditions. L2 composition studies show that the quality of writing products is positively related to the L2 writers' overall L2 proficiency (Carson, Carrell, Silberstein, Kroll & Kuehn, 1990), L2 reading comprehension and L2 grammar test scores (Flahive & Bailey, 1993), and lexical variation (Engber, 1995).

Where the language aspect of writing is concerned, L2 composition studies and task planning studies show that variables such as writing modes and planning conditions seem to affect the language quality of L2 writing products; for example, the syntactic complexity of L2 writings tends to be more complex in expository writing than in narrative writing (Yau & Belanger, 1984), with L1 translation than with direct composition (Kobayashi & Rinnert, 1992), and with careful planning than with pressured planning (Ellis & Yuan, 2005). Most of the studies, however, have investigated the effects of various planning conditions on tasks immediately following the planning, and studies investigating the effects of in-class planning conditions on the language quality of students' writing assignments seem to be scarce. In addition, few studies seem to investigate the effects of planning in L1, a common process in L2 writing (Uzawa & Cumming, 1989), on writing assignments. Thus the present study aims to investigate the effects of writing modes and in-class planning conditions on the language of writing assignments in order to:

1. Determine how writing modes, in-class planning conditions, and students' proficiency interact and affect the language in writing assignments; and
2. Suggest what writing modes and planning conditions may be emphasized in class to help beginning level L2 students better the language quality of their writing assignments.

Methods

Participants

Participants were 17 Japanese university students, 13 male and four female students, who were freshmen at a private university in Kyoto City. The students were in a compulsory English reading class taught by the researcher meeting twice a week. According to the English placement test the students took on their first day on campus, the students' overall English proficiency was at the beginning level.

Data collection

The writing products of the students were collected during the first 8 weeks in the spring semester of 2006. After reading a passage of approximately 200 words in the textbook, the students were given work sheets on which the topics and planning conditions were printed (see Appendix). The researcher read what was printed on the sheets and told the students to write as much as possible within 10 minutes. After the sheets were collected, another set of work sheets was given to the students as assignments for the next class. The students wrote on 12 different topics: the first six topics were written in a narrative mode (N) and the other six written in either an expository or a persuasive mode (E). For each mode of writing, three planning conditions were given for in-class writings: L1 brainstorming (L1), form-focused planning (FF), and meaning-focused planning (MF). In L1 brainstorming, the topic was given in Japanese and the students wrote notes or passages in Japanese. In meaning-focused planning, the topic was given in English with writing hints in Japanese, and the students wrote notes or

passages in English. In form-focused planning, the topic and writing hints were both given in English, and the students wrote notes or passages in English. The students completed two assignments for each of the six combinations of modes and planning conditions: NL1, NFF, NMF, EL1, EFF, and EMF. All assignments were written in English. The order of the combination of modes and planning conditions are given in Table 1. Out of 28 students who registered for the class, 10 students submitted all 12 assignments and seven students submitted 11 assignments. The assignments of these 17 students, 194 writing products in total, were analyzed for this study.

Table 1. The modes and planning conditions of assignments

Narrative						Expository/Persuasive					
HW1	HW2	HW3	HW4	HW5	HW6	HW7	HW8	HW9	HW10	HW11	HW12
L1	MF	FF	MF	FF	L1	L1	MF	FF	MF	FF	L1

Note. HW=Homework; MF=Meaning-focused; FF=Form-focused; L1=L1 brainstorming.

Students' English proficiency

Apart from the placement test, students' knowledge of grammar and vocabulary and their reading ability were tested. Grammar knowledge was tested using 20 questions which were randomly selected out of 90 questions from the grammar section of a TOEFL preparatory textbook (Sullivan, Zhong & Brenner, 1999). Vocabulary knowledge was tested using the Vocabulary Level Tests (Nation, 2001). Although the students took tests of 2000 word level, 3000 word level, 5000 word level, and Academic word level, only the total scores of the 2000 word level test and the 3000 word level test were used in this study because of the low test scores of the other two level tests. Reading ability was tested using three sets of reading questions in the reading section of a TOEFL preparatory textbook (Sullivan, Zhong & Brenner, 1999). The sets of reading questions were selected out of 20 sets of readings according to a pilot study measuring the time taken to complete each set. Due to the class schedule, students took each test on different days, which resulted in the different number of students taking the tests. The students (Student A~Student Q) were grouped into the upper and the lower scoring groups according to their test scores on each test (Table 2). A series of *t* tests confirmed the group differences in reading test scores ($t(12) = 6.41$, $p < .01$), vocabulary test scores ($t(14) = 6.97$, $p < .01$), and grammar test scores ($t(15) = 6.70$, $p < .01$). Due to the class schedule, each test was conducted on separate days, which resulted in a different number of students taking each test: 14 students took the reading test, 16 students took the vocabulary test, and 17 students took the grammar test. Each scoring group consisted of different students except for three students (Student A, B, C) in the upper scoring groups of all three tests and two students (Student J, K) in the lower scoring groups of all three tests (Table 3).

Table 2. Mean test scores of the upper scoring group and the lower scoring group

	Reading (max 36)	Vocabulary (max 60)	Grammar (max 20)
Upper Scoring	13.43 (SD 2.15)	45.25 (SD 4.13)	8.78 (SD .83)
Lower Scoring	5.86 (SD 2.27)	29.25 (SD 5.01)	6.25 (SD .71)

Table 3. Students in the upper scoring group and the lower scoring group

	Reading (n=17)	Vocabulary (n=16)	Grammar (n=14)
Upper Scoring	A, B, C, D, E, F, G, H, I	A, B, C, G, H, M, N, O	A, B, C, D, E, L, P
Lower Scoring	J, K, L, M, N, O, P, Q	J, K, E, F, I, L. P. Q	J, K, F, G, H, N, O

Data analysis

In line with previous studies (Ellis, 2005; Ellis & Barkhuizen, 2005; Ellis & Yuan, 2005), the language of students' writings was analyzed on three aspects: fluency, accuracy, and complexity. For this study, the following seven variables were selected for measuring fluency, accuracy, and complexity: the number of words per sentence (W/S) and the number of words per *t*-unit (W/*T*-unit) for fluency; the rate of error-free clauses within all clauses (EFC/Cl) and the rate of correct verb forms within all verbs (CVF/V) for accuracy; and the number of clauses per *t*-unit (Cl/*T*-unit), Type-token ratio (TTR), and the number of different forms of verbs (DVF) for complexity. In this study, a *t*-unit was defined as a unit consisted of a main clause with all subordinate clauses attached to it (Hunt, 1965). All variables were counted and calculated by the researcher except for the number of words, types, and tokens, which were counted using the WordSmith tool.

The design of the study was a within-subject design with two independent variables, modes and planning conditions, and a third independent variable, students' proficiency; therefore, a series of two-way and three-way repeated-measure ANOVAs was performed to examine the differences among the means for each of the seven dependent variables of measurement. The effect sizes were calculated using a formula given by Field (2005) to examine the size of the effect of different modes and instructions on each variable.

Results

Fluency

The results for the number of words per sentence showed that students wrote longer sentences in an expository or a persuasive mode, regardless of the planning conditions or their proficiency level, except that students with lower vocabulary scores tended to write longer sentences in an expository or a persuasive mode (Tables 4 and 5). The results for the number of words per *t*-unit showed that *t*-units tended to be longer in both narrative and expository modes with L1 brainstorming than with meaning-focused planning, and also longer in an expository or a persuasive mode with form-focused planning than with meaning-focused planning. No significant difference was seen according to the proficiency of the students, except that students with lower vocabulary scores tended to write longer *t*-units in an expository or a persuasive mode (Tables 6 and 7). The effect size of modes (r = .68) was larger than that of planning conditions (r = .47; FM vs. L1). In summary, students tended to write longer in an expository or a persuasive mode regardless of their proficiency, and tended to write longer *t*-units with L1 brainstorming and form-focused planning.

Table 4. Means of the number of words per sentence

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (*n*=17)		8.3	8.4	8.4	8.9	10.7	11.0
Reading	Upper (*n*=7)	8.6	8.4	9.5	10.8	10.8	11.0
Vocabulary	Lower (*n*=7)	8.7	8.7	8.2	11.4	11.4	11.6
	Upper (*n*=8)	8.3	8.4	8.7	9.5	9.9	10.1
Grammar	Lower (*n*=8)	7.8	7.9	8.5	11.2	11.4	11.2
	Upper (*n*=9)	8.5	8.6	8.9	10.6	10.9	11.7
	Lower (*n*=8)	8.1	8.1	8.6	10.8	10.5	10.1

Table 5. ANOVA results (*F*-values) for number of words per sentence

		All (n=17)		Reading Level (n=14)		Vocabulary Level (n=16)		Grammar Level (n=17)	
Source		*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Mode		35.80	.00 [.83]	32.77	.00 [.86]	43.06	.00 [.87]	33.44	.00 [.83]
Mode x Level Planning				.94	.35	6.72	.02 [.57]	.09	.77
	FM vs. L1	1.54	.23	.31	.59	2.22	.16	1.44	.25
	FF vs. L1	1.18	.29	.43	.52	.52.	.48	1.06	.32
Planning x Level	FM vs. FF	.02	.89	.01	.91	1.08	.32	.01	.92
	FM vs. L1			1.12	.31	.09	.77	2.31	.15
	FF vs. L1			1.49	.25	.05	.83	.61	.45
Mode x Planning	FM vs. FF			.03	.86	.01	.92	.45	.51
	FM vs. L1	.05	.83	.00	.97	.23	.64	.10	.75
	FF vs. L1	.02	.88	.00	.97	.48	.50	.04	.84
Mode x Planning x Level	FM vs. FF	.00	.96	.02	.91	.15	.71	.01	.94
	FM vs. L1			.92	.36	.50	.49	2.63	.13
	FF vs. L1			.71	.42	.27	.61	.85	.37
	FM vs. FF			.00	.97	.05	.83	.39	.54

Note. [ ]=Effect size.

Table 6. Means of the number of words per *t*-unit

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (*n*=17)		8.2	7.9	8.4	8.9	9.7	9.7
Reading	Upper (*n*=7)	8.5	7.7	8.8	8.8	10.0	9.8
Vocabulary	Lower (*n*=7)	8.2	8.3	8.3	9.3	9.9	9.8
	Upper (*n*=8)	8.3	8.1	8.6	8.3	9.6	9.1
Grammar	Lower (*n*=8)	7.3	7.3	8.1	9.4	9.7	10.0
	Upper (*n*=9)	8.3	8.1	8.4	9.0	10.0	10.3
	Lower (*n*=8)	8.1	7.6	8.5	8.9	9.3	9.1

Table 7. ANOVA results (*F*-values) for number of words per *t*-unit

		All (*n*=17)		Reading Level (*n*=14)		Vocabulary Level (*n*=16)		Grammar Level (*n*=17)	
Source		*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Mode		14.12	.00 [.68]	9.76	.01 [.67]	20.45	.00 [.77]	13.38	.00 [.69]
Mode x Level Planning				.10	.76	5.71	.03 [.54]	.59	.45
	FM vs. L1	4.56	.05 [.47]	3.03	.11	6.97	.02 [.58]	4.26	.06
	FF vs. L1	1.45	.25	.60	.45	1.07	.32	1.36	.26
Planning x Level	FM vs. FF	.56	.46	.91	.36	1.59	.23	.48	.50
	FM vs. L1			.36	.56	.04	.85	.73	.41
	FF vs. L1			.89	.36	.82	.38	.00	.95
Mode x Planning	FM vs. FF			.07	.80	.46	.51	.57	.46
	FM vs. L1	.77	.39	.71	.42	.13	.72	.67	.43
	FF vs. L1	.55	.47	.63	.44	1.04	.33	.61	.45
Mode x Planning x Level	FM vs. FF	4.42	.05	7.05	.02 [.61]	3.33	.09	4.09	.06
	FM vs. L1			.04	.85	.29	.60	1.41	.25
	FF vs. L1			.47	.51	.12	.74	.63	.44
	FM vs. FF			2.18	.17	1.12	.31	.07	.79

Note. [ ]=Effect size.

Accuracy

The results for the rate of error-free clauses showed no significant difference among modes, planning conditions, or proficiency of the students, except that in an expository or a persuasive mode, the rate increased with meaning-focused planning whereas it decreased with L1 brainstorming (Tables 8 and 9). The results for the rate of correct verb forms also showed no significant difference among modes, planning conditions, or proficiency of the students, except for students with different reading levels (Tables 10 and 11). The rate was higher with form-focused planning than with meaning-focused planning in an expository or a persuasive mode among students with higher reading scores, whereas the ratio was higher with meaning-focused planning than with form-focused planning among those with lower reading scores. Although students tended to have higher rates of correct verb forms in a narrative mode, the effect size of the interaction among modes, planning conditions, and reading scores (r = .63; N vs. E, FM vs. FF, reading level) was larger than the effect size of modes alone (r = .54; N vs. E). In summary, students tended to make more errors in an expository or a persuasive mode with meaning-focused planning than with L1 brainstorming. Furthermore, in an expository or a persuasive mode, students with higher reading scores used more correct verb forms with form-focused planning than with meaning-focused planning, whereas students with lower reading scores used more correct verb forms with meaning-focused planning than with form-focused planning.

Table 8. Means of the rate of error free clauses

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (n=17)		.41	.47	.49	.49	.49	.44
Reading	Upper (n=7)	.40	.48	.53	.45	.49	.45
Vocabulary	Lower (n=7)	.40	.46	.46	.55	.52	.42
	Upper (n=8)	.42	.52	.52	.48	.55	.47
Grammar	Lower (n=8)	.41	.41	.46	.48	.43	.43
	Upper (n=9)	.47	.50	.49	.47	.50	.44
	Lower (n=8)	.34	.43	.48	.50	.48	.45

Table 9. ANOVA results (F-values) for the rate of error free clauses

		All (n=17)		Reading (n=14)		Vocabulary (n=16)		Grammar (n=17)	
Source		*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Mode		.87	.37	1.32	.27	.46	.51	1.30	.27
Mode x Level Planning				2.01	.18	.03	.87	4.24	.06
	FM vs. L1	.22	.64	.18	.68	.25	.63	.25	.63
	FF vs. L1	.20	.66	.49	.50	.10	.76	.16	.70
Planning x Level	FM vs. FF	.59	.45	.78	.40	.53	.48	.56	.47
	FM vs. L1			1.87	.20	.40	.54	.41	.53
	FF vs. L1			.91	.36	1.49	.24	.50	.49
Mode x Planning	FM vs. FF			.40	.54	2.33	.15	.01	.92
	FM vs. L1	4.56	.05 [.47]	6.67	.02 [.60]	3.25	.09	4.96	.04 [.50]
	FF vs. L1	1.88	.19	3.19	.10	1.77	.21	1.81	.20
Mode x Planning x Level	FM vs. FF	1.16	.30	1.09	.32	.57	.46	1.28	.28
	FM vs. L1			.12	.73	.01	.91	1.38	.26
	FF vs. L1			.00	.99	.19	.67	.09	.77
	FM vs. FF			.13	.73	.09	.77	.98	.34

Note. [ ]=Effect size.

Table 10. Means of the rate of correct verb forms

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (*n*=17)		.86	.87	.84	.81	.86	.83
Reading	Upper (*n*=7)	.90	.89	.84	.81	.87	.81
Vocabulary	Lower (*n*=7)	.84	.88	.86	.84	.81	.82
	Upper (*n*=8)	.87	.88	.85	.79	.87	.82
Grammar	Lower (*n*=8)	.85	.85	.83	.82	.83	.83
	Upper (*n*=9)	.88	.86	.82	.84	.88	.84
	Lower (*n*=8)	.84	.87	.88	.78	.83	.82

Table 11. ANOVA results (*F*-values) for the rate of correct verb forms

		All (*n*=17)		Reading (*n*=14)		Vocabulary (*n*=16)		Grammar (*n*=17)	
Source		*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Mode		2.26	.15	5.02	.05 [.54]	2.14	.17	2.78	.12
Mode x Level Planning				.08	.78	.27	.61	2.54	.13
	FM vs. L1	.00	.98	.22	.65	.01	.95	.01	.92
	FF vs. L1	1.37	.26	1.51	.24	1.39	.26	1.23	.29
Planning x Level	FM vs. FF	1.89	.19	.47	.51	2.21	.16	2.01	.18
	FM vs. L1			.16	.70	.00	.96	1.70	.21
	FF vs. L1			1.29	.28	.52	.48	.67	.43
Mode x Planning	FM vs. FF			.49	.50	.86	.37	.85	.37
	FM vs. L1	.61	.45	.01	.93	1.16	.30	.52	.48
	FF vs. L1	.04	.85	.02	.90	.00	.95	.05	.83
Mode x Planning x Level	FM vs. FF	1.29	.27	.00	.96	1.46	.25	1.16	.30
	FM vs. L1			1.18	.30	.02	.89	.69	.42
	FF vs. L1			.20	.66	.43	.53	.26	.62
	FM vs. FF			7.71	.02 [.63]	.64	.44	.24	.64

Note. [ ]=Effect size.

Complexity

The results for the number of clauses per *t*-unit showed that the rate was higher in an expository or a persuasive mode than in a narrative mode, and with form-focused planning than with L1 brainstorming regardless of planning conditions or proficiency. In an expository or a persuasive mode, the rate was higher with meaning-focused planning than with L1 brainstorming. Among students with lower reading scores, the rate tended to be higher with form-focused planning than with L1 brainstorming in an expository or a persuasive mode, and among students with lower grammar scores the ratio tended to be higher with meaning-focused planning than with L1 brainstorming in an expository or a persuasive mode. No significant difference was seen according to the level of vocabulary scores (Tables 12 and 13).

The results for type-token ratio showed that the ratio was lower in an expository or a persuasive mode regardless of planning conditions or proficiency. Students with lower proficiency scores, however, tended to be more affected by differences in planning conditions in an expository or a persuasive mode than those with higher proficiency scores; for example, students with lower reading scores had lower TTR with L1 brainstorming than form-focused planning, students with lower vocabulary scores had lower TTR with meaning-focused planning than with L1 brainstorming, and students with lower grammar scores had lower TTR with meaning-focused planning than form-focused planning (Tables 14 and 15).

Finally, the results for the number of different verb forms showed that the number tended to increase in expository or a persuasive mode regardless of planning conditions or proficiency and also tended to increase more with L1 brainstorming than with form-focused planning regardless of modes or proficiency. The effect sizes showed that the effect from planning conditions was stronger than the effect from

modes. In addition, although the students' reading scores or grammar scores had no significant effect on the number of verb forms, those students with higher vocabulary scores tended to write less verb forms with form-focused planning than with meaning-focused planning, whereas those students with lower vocabulary scores tended to write more with form-focused planning than with meaning-focused planning (Tables 16 and 17).

In summary, students wrote more syntactically complex but less lexically rich sentences in an expository or a persuasive mode. Although more verb forms were produced with L1 brainstorming than with form-focused planning, a higher rate of clauses per *t*-unit was produced with form-focused planning or meaning-focused planning rather than L1 brainstorming. The complexity measures tended to be affected by certain aspects of students' proficiency.

Table 12. Means of the number of clauses per *t*-unit

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (*n*=17)		1.2	1.3	1.2	1.4	1.4	1.4
Reading	Upper (*n*=7)	1.2	1.3	1.3	1.4	1.4	1.4
Vocabulary	Lower (*n*=7)	1.2	1.3	1.2	1.4	1.5	1.4
	Upper (*n*=8)	1.2	1.2	1.2	1.3	1.4	1.3
Grammar	Lower (*n*=8)	1.1	1.3	1.2	1.5	1.5	1.4
	Upper (*n*=9)	1.2	1.3	1.3	1.5	1.5	1.5
	Lower (*n*=8)	1.2	1.3	1.2	1.4	1.4	1.3

Table 13. ANOVA results (*F*-values) for the number of clauses per *t*-unit

		All (*n*=17)		Reading (*n*=14)		Vocabulary (*n*=16)		Grammar (*n*=17)	
Source		F	Sig.	F	Sig.	F	Sig.	F	*Sig.*
Mode		18.22	.00 [.73]	13.36	.00 [.73]	18.07	.00 [.75]	18.35	.00 [.74]
Mode x Level Planning				.53	.48	2.05	.17	1.77	.20
	FM vs. L1	.09	.77	.00	1.00	.09	.78	.26	.62
	FF vs. L1	5.16	.04 [.49]	5.33	.04 [.55]	6.56	.02 [.56]	5.47	.03 [.52]
Planning x Level	FM vs. FF	3.62	.08	4.11	.07	4.49	.05	3.35	.09
	FM vs. L1			2.10	.17	7.89	.01 [.60]	7.58	.02 [.58]
	FF vs. L1			4.78	.05 [.53]	.20	.66	1.12	.31
Mode x Planning	FM vs. FF			.56	.47	1.93	.19	.62	.44
	FM vs. L1	10.04	.01 [.62]	5.23	.04 [.55]	.12	.74	9.90	.01 [.63]
	FF vs. L1	.01	.91	.01	.94	1.05	.32	.01	.93
Mode x Planning x Level	FM vs. FF	3.13	.10	1.81	.20	1.93	.19	3.20	.09
	FM vs. L1			.51	.49	.12	.74	.45	.51
	FF vs. L1			.22	.65	1.05	.32	.11	.75
	FM vs. FF			.01	.93	.86	.37	.59	.45

Note. [ ]=Effect size.

Table 14. Means of type-token ratio

		Narrative			Expository/Persuasive		
		MF	FF	L1	MF	FF	L1
All (*n*=17)		.63	.61	.65	.57	.57	.58
Reading	Upper (*n*=7)	.61	.63	.61	.57	.56	.59
Vocabulary	Lower (*n*=7)	.62	.60	.68	.55	.58	.54
	Upper (*n*=8)	.62	.62	.66	.57	.56	.57
Grammar	Lower (*n*=8)	.65	.60	.65	.55	.59	.59
	Upper (*n*=9)	.62	.62	64	.56	.55	.55
	Lower (*n*=8)	.64	.60	.66	.58	.61	.61

Table 15. ANOVA results (*F*-values) for type-token ratio

Source		All (*n*=17) F	All (*n*=17) Sig.	Reading (*n*=14) F	Reading (*n*=14) Sig.	Vocabulary (*n*=16) F	Vocabulary (*n*=16) Sig.	Grammar (*n*=17) F	Grammar (*n*=17) *Sig.*
Mode		30.07	.00 [.81]	22.92	.00 [.81]	34.92	.00 [.84]	32.38	.00 [.68]
Mode x Level Planning				1.36	.27	.21	.65	2.90	.11
	FM vs. L1	4.00	.06	2.00	.18	3.81	.07	4.17	.06
	FF vs. L1	3.49	.08	.88	.37	3.75	.07	3.70	.07
Planning x Level	FM vs. FF	,08	.78	.11	.75	.13	.72	.08	.78
	FM vs. L1			.58	.46	.04	.85	.86	.37
	FF vs. L1			.68	.43	.04	.85	1.01	.33
Mode x Planning	FM vs. FF			.02	.90	.01	.93	.07	.80
	FM vs. L1	.09	.77	1.06	.32	.02	.89	.07	.80
	FF vs. L1	1.59	.23	3.88	.07	1.78	.20	1.75	.21
Mode x Planning x Level	FM vs. FF	1.28	.28	.21	.65	3.76	.07	1.96	.18
	FM vs. L1			1.63	.23	1.51	.24	.31	.58
	FF vs. L1			15.92	.00 [.76]	.20	.66	1.10	.31
	FM vs. FF			4.56	.05 [.52]	8.11	.01	5.16	.04 [.51]

Note. [ ]=Effect size.

Table 16. Means of the number of different verb forms

		Narrative MF	Narrative FF	Narrative L1	Expository/Persuasive MF	Expository/Persuasive FF	Expository/Persuasive L1
All (*n*=17)		3.4	3.4	3.8	4.1	3.7	4.5
Reading	Upper (*n*=7)	3.7	3.9	3.9	3.9	4.1	4.6
Vocabulary	Lower (*n*=7)	3.1	3.4	3.8	4.3	3.1	4.5
	Upper (*n*=8)	3.6	3.9	3.9	4.7	3.1	4.6
Grammar	Lower (*n*=8)	3.1	2.8	3.7	3.4	4.2	4.4
	Upper (*n*=9)	3.5	3.6	3.7	4.7	4.2	4.8
	Lower (*n*=8)	3.3	3.1	3.9	3.4	3.3	4.1

Table 17. ANOVA results (*F*-values) for the number of different verb forms

Source		All (*n*=17) F	All (*n*=17) Sig.	Reading (*n*=14) F	Reading (*n*=14) Sig.	Vocabulary (*n*=16) F	Vocabulary (*n*=16) Sig.	Grammar (*n*=17) F	Grammar (*n*=17) *Sig.*
Mode		4.97	.04 [.49]	2.20	.16	4.09	.06	4.94	.04 [.50]
Mode x Level Planning				.04	.85	.63	.44	2.25	.16
	FM vs. L1	3.97	.06	3.46	.09	4.04	.06	4.43	.05
	FF vs. L1	8.66	.01 [.59]	7.88	.02 [.63]	9.17	.01 [.63]	9.33	.01 [.62]
Planning x Level	FM vs. FF	.93	.35	.38	.55	1.80	.20	.86	.37
	FM vs. L1			.00	1.00	2.44	.14	1.65	.22
	FF vs. L1			2.96	.11	.14	.72	1.50	.24
Mode x Planning	FM vs. FF			2.77	.12	6.19	.03 [.55]	.01	.92
	FM vs. L1	.02	.89	.02	.88	.01	.94	.02	.88
	FF vs. L1	.61	.45	3.01	.11	.72	.41	.53	.48
Mode x Planning x Level	FM vs. FF	.24	.63	1.03	.33	.51	.49	.20	.67
	FM vs. L1			1.09	.32	.95	.35	.02	.88
	FF vs. L1			.55	.47	7.30	.02 [.59]	.35	.56
	FM vs. FF			1.50	.24	8.10	.01 [.61]	.29	.60

Note. [ ]=Effect size.

Discussion

Writing modes and in-class planning conditions seem to have affected the language of students' writing assignments. In general, the students wrote with more fluency but with less accuracy, and with more syntactic complexity but with less lexical richness in an expository or a persuasive mode than in a narrative mode. The effects of writing modes, planning conditions, and students' proficiency on fluency, accuracy, and complexity will be discussed separately.

Where fluency is concerned, the results confirm previous studies on L2 writing mentioning that text length differs according to topics (Park, 1988) and text length is greater when planning was done in L1 (Freidlander, 1990). The reason for increased number of words per sentence with L1 brainstorming and form-focused planning in an expository or a persuasive mode could be that the former aids working memory in producing meaning and thus results in more fluency, whereas the latter aids working memory in producing form and thus results in leaving extra room for increasing fluency. Meaning-focused planning in this study gave the topic in English with writing hints in Japanese. This planning condition may have been less effective than L1 brainstorming in producing meaning and less effective than form-focused planning in producing form. A writer's paradox could explain the reason for students with lower vocabulary scores writing more words per sentence or *t*-unit: less-skilled writers sometimes generate text more fluently than do skilled writers (McCutchen, 2000). Whereas students with lower vocabulary scores may write down whatever word comes to their minds, students with higher vocabulary scores may choose words more carefully, resulting in shorter sentences or *t*-units.

As for accuracy, the students' overall low language proficiency is possibly the cause for the low rates of error-free clauses and of correct verb forms. The trade-off occurring among fluency, accuracy, and complexity may explain the reason for L1 brainstorming increasing clause level accuracy in an exploratory or a persuasive mode: L1 brainstorming aids in producing meaning and thus leaves extra room in working memory for accuracy. Interestingly, students' differences in vocabulary scores and grammar scores did not affect accuracy. Whereas students with lower reading scores produced more correct verb forms with meaning-focused planning than with form-focused planning, students with higher reading scores did so with form-focused planning than with meaning-focused planning. This may be because both the topics and the hints were given in English in form-focused conditions; students with lower reading scores may not have been able to use the information given in form-focused conditions properly as much as those with higher reading scores may have. These different rates in accuracy according to planning conditions suggest that beginning level students may benefit from a combination of the three planning conditions rather than any single condition for increasing accuracy.

Complexity will be discussed according to syntactic complexity measured by the number of clauses per *t*-unit and lexical richness measured by type-token ratio and the number of different verb forms. Increased syntactic complexity in an expository or a persuasive mode with any planning condition confirms previous studies on topics and syntactic complexity (cf. Yau & Belanger, 1984). As for planning conditions, in an expository or a persuasive mode, both form-focused and meaning-focused planning seem to affect syntactic complexity, whereas in a narrative mode, only form-focused planning does so. This may be due to an expository or persuasive mode requiring more room for higher order thinking in working memory than a narrative mode; thus planning conditions with English language forms, even only for the topics, may have contributed to saving room for syntactic complexity. The results of type-token ratio and the

number of different verb forms exhibit not only differences between each other; an expository or a persuasive mode has lower type-token ratios but has a higher number of different verb forms than in a narrative mode. The results may cast doubt on whether TTR and DVF are measuring the same category of lexical richness. What is in common, however, is the effect of L1 brainstorming on students' with different vocabulary levels; students with lower vocabulary scores tend to write sentences with more lexical variety or with more different verb forms with L1 brainstorming and form-focused planning than with meaning-focused planning. This coincides with the effects of planning conditions on fluency: longer *t*-units in L1 brainstorming and form-focused planning conditions, and students with lower vocabulary scores writing longer sentences and *t*-units.

Conclusion

This study shows the possibility that in-class planning conditions affect the language of writing assignments. Even for beginning level university students, an expository or a persuasive mode of writing should be encouraged. This mode of writing will increase not only the fluency but also the syntactic complexity of their writings. As for planning conditions, L1 brainstorming seems to contribute toward producing ideas, lexical variety, and clause level accuracy; therefore, thinking in L1 may be encouraged rather than prohibited in the initial stages of planning what to write about and how to construct an explanation or an argument. It should be pointed out, however, that planning conditions attending to language forms should accompany L1 brainstorming: whereas L1 brainstorming has its benefits, it does not contribute toward producing syntactically complex sentences. This study also shows that students who have the same overall language proficiency exhibit different strengths and weaknesses in certain aspects of language proficiency, and therefore are affected by planning conditions in different ways. There seems to be a tendency that students with lower proficiency are more susceptible to different planning conditions. In particular, the effects of planning conditions on complexity showed varied results on students with weaknesses in different aspects of proficiency; therefore, planning conditions should be carefully balanced especially with beginning level students. To generalize the results of this study, the language of the writings of intermediate and advanced level students need to be investigated; furthermore, the investigation into the effects of the quality of language on the overall quality of writings demands further study.

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Appendix

Homework #1 (in-class activity: Write sentences in Japanese.)

Topic: 動物との思い出

Homework #2 (in-class activity: Write sentences or notes in English.)

Topic: Write an essay on your favorite book.

Hint: どのような時にどの（ような）本が読みたくなるのか、なぜその本がお気に入りなのか論じなさい。

Homework #3 (in-class activity: Write sentences or notes in English.)

Topic: Write an essay on your favorite chewing gum flavor.

Hint: I chew gum when I ….My favorite flavor is….I like the flavor because…

Homework #4 (in-class activity: Write sentences or notes in English.)

Topic: Write an essay on a well-known building.

Hint: 気に入っている建造物（神社等）を１つ選び、他の建造物との違いを３つ述べながらその良さを論じなさい。

Homework #5 (in-class activity: Write sentences or notes in English.)

Topic: Write an essay on your favorite animal.

Hint: I like…Compared to other [animals], they are [A], [B], and [C].

Homework #6 (in-class activity: Write sentences or notes in English.)

Topic: お気に入りのテレビ番組

Homework #7 (in-class activity: Write sentences in Japanese.)

Topic: あなたはタージ・マハルの装飾に携わった芸術家です。両手を切られたくはありません。そうならないように王様を説得して下さい。

Homework #8 (in-class activity: Write sentences or notes in English.)

Topic: Do you believe in dreams?

Hint: あなたは夢判断や夢占いを信じますか。それはなぜですか。

Homework #9 (in-class activity: Write sentences or notes in English.)

Topic: Why do you play sports?

Hint: I [do not] play sports because….It is good to play sports because…

Homework #10 (in-class activity: Write sentences or notes in English.)

Topic: You have to take an exam from 1:00 p.m. It is 12:30 p.m. now. The exam room is on the 5th floor. Will you take an elevator?

Hint: 入試等の時にエレベーターを使うのか使わないのか、具体例を挙げて自分の意見を論じなさい。

Homework #11 (in-class activity: Write sentences or notes in English.)

Topic: Asian actors or actresses seem to have stereotypic images in Hollywood movies (e.g., good at martial arts). Do you agree with this opinion?

Hint: I think Asian actors [do not] have stereotypic images in Hollywood movies. For example,….

Homework #12 (in-class activity: Write sentences in Japanese.)

Topic: 高校生や大学生が海外に留学する意義