

A Survey on the Relationship between Writing Ability, Learning Strategies, and Affective Factors: toward Designing Portfolios as an Instructional Tool in EFL Writing Classes of Japanese Junior High School Students

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Abstract

The final objective of this study is to design portfolios as an instructional tool in order to enhance the self-regulated writing ability of EFL Japanese junior high school students. Self-regulated learning is expected to be nurtured particularly through conferencing, which is one of the crucial elements of portfolios. In conferencing, various types of scaffolding (support for learning and problem-solving), such as peer scaffolding, are necessary. As the first step of this study, the learning strategies, namely, metacognitive and writing strategies, were selected and classified according to the writing ability and gender difference. Moreover, since learning strategies have been reported to be closely related with gender, the level of achievement and affective factors, such as learning style, motivation, and personality, the relationships among the strategies and other factors stated above were investigated. The results revealed that when grouping learners for the purpose of group conferencing where peer scaffolding is particularly expected to take place: 1) achievement level (in this case, of writing ability) should be taken into consideration; 2) gender should also be taken into consideration, and; 3) affective factors, such as learning style, motivation and personality could be negligible.

KEY WORDS

ポートフォリオ	portfolios	学習方略	learning strategies
ライティング方略	writing strategies	メタ認知方略	metacognitive strategies
ライティング	writing	情意要因	affective factors
性差	gender difference	足場掛け	scaffolding

1. Background of the Study

Though little research has been conducted concerning whether portfolios as an instructional tool are effective in English education in Japan, the research study by Mineishi(2001) is one of the most enlightening studies in this area. Mineishi points out that learning theory of constructivism has recently come to be highly reevaluated in the area of EFL English education.

Moreover, Yoden (2001) mentions that in constructivism, learning is interpreted as a process of reconstruction of knowledge and not as one of delivery of knowledge. In other words, in constructivism, ideal learners are self-regulated learners, who have knowledge of effective learning strategies and how and when to use them (Slavin, 2003).

In addition, support for learners is said to be crucial in the process of reconstruction of knowledge. The concept of "scaffolding" is used for explaining support for learners (Yoden(ed.), 2001). Slavin (2003) defines "scaffolding" as support for learning and problem solving provided by more competent peers or adults. This article follows his definition of scaffolding.

Concerning scaffolding, in our follow-up research study with EFL junior high school students using portfolios in English writing, conferencing is expected to provide the students with one of the most important opportunities where peer scaffolding would be expected to take place among learners. Actually, Genesee and others (1996) mention that conferencing offers opportunities for teachers and learners to reflect on learner portfolios through dialogue. Genesee and others also point out that conferencing is helpful not only for teachers to understand what types of learning strategies are used by their learners and whether the strategies are effective or not, but for learners to exchange information with their peers on how to use learning strategies.

As stated above, learning strategies are indispensable elements in self-regulated learning. Additionally, it is necessary to consider the statement of O'Malley et al. (1985) that self-regulated learning ability is closely related with learning strategies and that to learn metacognitive strategies simultaneously along with the specific strategies, such as writing or speaking strategies and so on, could enhance the effectiveness of learning quality. Klenowski (2002) also points out that portfolio development requires the metacognitive skills of learners. The final objective of this study is to design portfolios as an instructional tool in order to enhance the self-regulated writing ability of EFL Japanese junior high school students. In order to accomplish this objective, it is necessary to investigate the learning strategies, namely, metacognitive and writing strategies as the first step of this study. Moreover, as Oxford and Crookall (1989) mention, it is necessary to pay attention to the fact that all levels of learners use the strategies and highly proficient learners use more varied kinds of strategies more frequently than less proficient learners. Finally, it is necessary to investigate Ellis' model (1996) where the use of learning strategies is affected by affective factors, such as learning style, motivation, and personality as well as gender, and the use of learning strategies are interrelated with learning achievement.

2. Purpose of the Study

The purpose of this study is to investigate learning strategies, namely, metacognitive and writing strategies, which are used by Japanese EFL learners. The learners are expected to acquire the strategies through conferencing embedded in portfolio development, based on the learning theory of constructivism. In order to achieve the purpose, the following three points will be investigated. They are:

① to investigate the relationships between learning strategies, namely metacognitive strategies and writing strategies, of EFL Japanese junior high school students and levels of writing ability.

② to clarify whether there are some differences between gender and the levels of writing ability in the use of metacognitive and writing strategies.

③ to investigate the relationships between the strategies of both the upper writing group and the lower writing group and the affective factors.

3. Method of the Study

- 3.1 Time: The questionnaire was administered in June of 2002.
- 3.2 Participants: The participants of the study were 109 second-grade public junior high school students comprising of 50 boys and 59 girls in Chiba Prefecture, Japan.
- 3.3 Materials: The questionnaire consisted of the following 68 items, all of which used a five-point Likert scale. Out of 68 items, 28 items on writing strategies were selected based on the results of two pilot studies conducted in May of 2002; other items included 11 items on metacognitive strategies, 6 items on learning style, 8 items on motivation, and 15 items on personality, all of which were based on the items of Hojo (1999). In addition, the participants' writing ability was measured by the scores of an English composition, which was part of a mid-term English examination. The full score of this part was 40.
- 3.4 Procedures: The group survey was conducted for approximately 20 minutes during regular English classes.
- 3.5 Data Analysis: The data were analyzed by factor analysis, regression analysis, and analysis of variance (hereafter ANOVA).

4. Results and Discussion

- 4.1 Metacognitive and Writing Strategies Used by Either the Upper Writing Group or the Lower Writing Group

First of all, the participants were divided into two groups based on their scores on an English composition. The upper writing group consisted of 55 students (23 boys and 32 girls whose scores were 30 or more), while the lower writing group was comprised of 54 students (27 boys and 27 girls whose scores were less than 30). Secondly, after 28 writing and 11 metacognitive strategies were converted to a score from a minimum of 1 to a maximum of 5, corresponding to the number on the scale, the means and SDs of all the strategies were computed. Thirdly, in order to compare the differences of writing level in the use of the strategies, ANOVA was applied. The means, SDs and results of ANOVA are shown in Table 1.

As indicated in Table 1, concerning metacognitive strategies, all the means of the scores of the upper group were higher than those of the lower group. Next, 9 items showed significant differences or tendencies, except items 8 and 9. Moreover, it was found that item 2 was very positively used by the upper group, while it was used only slightly positively by the lower group. Finally, it was proved that item 1 was positively used by the upper group, though it was not used so frequently by the lower group.

Concerning writing strategies, the upper group showed higher means in 26 items, except items 14 and 27. Out of the 26 items, 16 items indicated significant differences or tendencies. Particularly items 11 and 15 were proved to be used only slightly positively by both groups.

From the findings above, it can be said that the upper group used more kinds of strategies more frequently than the lower group, though both groups used learning strategies. This result is consistent with those reported by Oxford and Crookall (1989). Thus, in conferencing, which is to be included in the portfolios designed by the authors, some metacognitive and writing strategies could be expected to be transferable from the upper group to the lower group as scaffolding. Moreover, in terms of grouping the learners for group-conferencing, it would be desirable to mix upper-group learners and lower-group learners in one group.

4.2 Differences of Gender Along with Writing Ability in the Use of Learning Strategies of EFL Japanese Junior High School Students

Firstly, the upper writing group and lower writing group were respectively subdivided into two groups by gender, yielding 4 groups. Secondly, after the means and SDs of metacognitive and writing strategies were computed for all these 4 groups, ANOVA was applied to the results, as indicated in Table 2 and Table 3.

According to Table 2, items 8 and 9 of metacognitive strategies showed no significant differences in terms of gender (item 8: $F_{(3,105)}=1.76$, NS; item 9: $F_{(3,105)}=1.24$, NS). However, in the rest of 9 items, significant differences were found

Table 1: Means and SDs and the Results of ANOVA of Metacognitive Strategies (MS) and Writing Strategies in Pre-questionnaire and Post-questionnaire (N=109)

item	contents of the items	Lower Group		Upper Group		Results of ANOVA		Difference	
		mean	SD	mean	SD	F(1,40)	p	L.G.	U.G.
MS 1	To concentrate one's mind on classes	2.78	1.02	3.80	0.85	32.36	**	<	
MS 2	To silently answer questions during classes	3.33	1.27	4.38	0.65	29.41	**	<	
MS 3	To think of the reasons for the mistakes	2.94	1.14	3.58	1.07	9.10	**	<	
MS 4	To set up an objective when one studies English	2.39	1.04	2.76	1.15	3.18	+	<	
MS 5	To study English regularly every day	1.70	0.79	2.33	1.14	10.97	**	<	
MS 6	To think of the difficulty level of and required time for tasks	2.22	1.13	2.65	0.99	4.55	*	<	
MS 7	To try to remember new words daily	2.44	1.14	2.95	1.24	4.81	*	<	
MS 8	To think of the reasons for good results	2.59	1.35	2.93	1.09	2.03	NS	<	
MS 9	To ask one's friend who is good at English	2.89	1.36	2.93	1.25	0.02	NS	<	
MS10	To try out a suitable English-learning method	2.56	1.25	3.04	1.17	4.29	*	<	
MS11	To think of the effect of the English-learning method	2.52	1.21	2.98	1.10	4.39	*	<	
ws 1	To utilize a Japanese-English dictionary	3.07	1.33	3.95	1.15	13.45	**	<	
ws 2	To ask someone to check what one writes	3.06	1.34	3.35	1.32	1.29	NS	<	
ws 3	To ask English teachers	2.93	1.24	3.53	1.23	6.45	*	<	
ws 4	To utilize grammar one already knows	3.04	1.23	4.05	0.93	23.81	**	<	
ws 5	To utilize textbooks	2.93	1.30	3.42	1.15	4.39	*	<	
ws 6	To try to write easily intelligible English for readers	2.93	1.24	3.38	0.93	4.71	*	<	
ws 7	To utilize the study aid	2.65	1.10	2.89	1.18	1.23	NS	<	
ws 8	To paraphrase Japanese easily for translation	2.74	1.23	3.42	1.01	9.86	**	<	
ws 9	To utilize words one already knows	3.24	1.33	4.15	0.83	18.26	**	<	
ws10	To utilize the list of idioms	2.50	1.19	2.78	1.24	1.46	NS	<	
ws11	To write as much as possible	3.54	1.40	3.85	0.99	1.88	NS	<	
ws12	To utilize the list of English sentences	2.80	1.16	3.09	1.08	1.90	NS	<	
ws13	To make long Japanese sentences shorter	2.93	1.24	3.31	1.09	2.94	+	<	
ws14	To ask an ALT	2.48	1.14	2.44	1.12	0.04	NS	<	
ws15	To ask friends	3.46	1.37	3.67	1.22	0.71	NS	<	
ws16	To translate one's composition into Japanese to check it	2.85	1.20	3.35	1.22	4.52	*	<	
ws17	To utilize an English-Japanese dictionary	2.93	1.39	3.75	1.17	11.12	**	<	
ws18	To utilize a workbook	2.81	1.23	2.91	1.04	0.19	NS	<	
ws19	To ask parents, a big brother, or a big sister	3.07	1.45	3.58	1.40	3.46	+	<	
ws20	To utilize notebooks written in English classes	2.94	1.22	3.16	1.12	0.96	NS	<	
ws21	To work out a detailed plan for one's composition	2.96	1.12	3.60	0.93	10.46	**	<	
ws22	To try to write natural English	3.06	1.22	3.42	1.07	2.73	NS	<	
ws23	To try to write one's desire to deliver to readers	2.74	1.18	3.27	0.95	6.69	*	<	
ws24	To try to avoid grammatical mistakes	2.91	1.19	3.65	0.99	12.82	**	<	
ws25	To check spelling after writing an English composition	3.28	1.41	3.96	0.98	8.75	**	<	
ws26	To utilize the word list at the end of the textbooks	3.20	1.37	3.69	1.25	3.79	+	<	
ws27	To think and write in Japanese first	3.09	1.19	2.87	1.00	1.10	NS	<	
ws28	To make a rough draft	2.70	1.21	2.91	1.21	0.79	NS	<	

+ .05 < p < .10 * p < .05 ** p < .01

Table 2: Means and SDs and the Results of ANOVA by 4 Groups of Items of Metacognitive Strategies

item	Total (N=109)		①Upper Boys(N=23)		②Upper Girls(N=32)		③Lower Boys(N=27)		④Lower Girls(N=27)		Results of ANOVA		Multiple Comparison (LSD)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F(3,105)	p	MSe (5%)	Comparison of 4 groups
MS1	3.29	1.07	3.78	0.90	3.81	0.82	2.41	1.01	3.15	0.91	14.49	**	0.83	①>③ ②>③ ②>④ ④>③
MS2	3.86	1.13	4.35	0.65	4.41	0.67	2.85	1.51	3.81	0.74	15.43	*	0.92	①>③ ②>③ ②>④ ④>③
MS3	3.27	1.14	3.48	1.16	3.66	1.00	2.70	1.27	3.19	0.96	4.04	*	1.21	①>③ ②>③
MS4	2.58	1.11	2.35	1.19	3.06	1.05	2.19	1.04	2.59	1.01	3.77	*	1.14	②>① ②>③
MS5	2.02	1.03	1.96	1.02	2.59	1.16	1.48	0.85	1.93	0.68	6.87	*	0.91	②>① ②>③ ②>④
MS6	2.44	1.08	2.57	0.99	2.72	0.99	2.04	1.13	2.41	1.12	2.16	+	1.12	②>③
MS7	2.70	1.21	2.70	1.29	3.13	1.18	2.30	1.20	2.59	1.08	2.47	+	1.41	②>③
MS8	2.76	1.23	2.96	1.15	2.91	1.06	2.30	1.41	2.89	1.25	1.76	NS	1.49	NONE
MS9	2.91	1.29	2.74	1.29	3.06	1.22	2.59	1.47	3.19	1.18	1.24	NS	1.67	NONE
MS10	2.80	1.23	2.83	1.11	3.19	1.20	2.33	1.33	2.78	1.15	2.45	+	1.46	②>③
MS11	2.75	1.17	2.70	1.22	3.19	0.97	2.33	1.27	2.70	1.14	2.79	*	1.31	②>③

+ .05 < p < .10 * p < .05 ** p < .01

Table 3: Means and SDs and the Results of ANOVA by 4 Groups of Items of Writing Strategies

item	Total (N=109)		①Upper Boys(N=23)		②Upper Girls(N=32)		③Lower Boys(N=27)		④Lower Girls(N=27)		Results of ANOVA F(3,105) p	Multiple Comparison (LSD) MSe (5%)	Comparison of 4 groups	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
WS1	3.51	1.31	4.09	1.24	3.84	1.08	2.52	1.34	3.63	1.08	9.08	**	1.40	①>③ ②>③ ④>③
WS2	3.20	1.33	3.65	1.40	3.13	1.24	2.81	1.39	3.30	1.27	1.75	NS	1.74	①>③
WS3	3.23	1.27	3.87	1.18	3.28	1.22	2.63	1.31	3.22	1.12	4.37	**	1.47	①>③ ②>③
WS4	3.55	1.20	4.17	0.94	3.97	0.93	3.00	1.18	3.07	1.30	8.01	**	1.20	①>③ ①>④ ②>③ ②>④
WS5	3.17	1.25	3.48	1.24	3.38	1.10	2.67	1.36	3.19	1.21	2.31	+	1.50	①>③ ②>③
WS6	3.16	1.12	3.17	0.98	3.53	0.88	2.48	1.22	3.37	1.11	5.43	**	1.11	①>③ ②>③ ④>③
WS7	2.77	1.14	2.43	1.27	3.22	1.01	2.22	1.12	3.07	0.92	5.65	**	1.16	②>① ②>③ ④>① ④>③
WS8	3.08	1.17	3.09	1.08	3.66	0.90	2.52	1.25	2.96	1.19	5.30	**	1.23	②>③ ②>④
WS9	3.70	1.19	4.22	0.74	4.09	0.89	3.11	1.53	3.37	1.11	6.32	**	1.23	①>③ ①>④ ②>③ ②>④
WS10	2.64	1.22	2.74	1.39	2.81	1.15	2.22	1.22	2.78	1.12	1.45	NS	1.47	NONE
WS11	3.70	1.21	4.09	0.95	3.69	1.00	3.04	1.56	4.04	1.02	4.58	**	1.34	①>③ ②>③ ④>③
WS12	2.94	1.12	2.87	1.22	3.25	0.95	2.30	1.27	3.30	0.78	5.29	**	1.12	②>③ ④>③
WS13	3.12	1.18	3.09	1.31	3.47	0.88	2.41	1.22	3.44	1.05	5.55	**	1.23	①>③ ②>③ ④>③
WS14	2.46	1.13	2.74	1.36	2.22	0.87	2.33	1.30	2.63	0.97	1.29	NS	1.26	NONE
WS15	3.57	1.29	3.52	1.44	3.78	1.04	2.89	1.50	4.04	0.94	4.33	**	1.53	②>③ ④>③
WS16	3.10	1.23	2.96	1.33	3.63	1.07	2.56	1.40	3.15	0.91	4.15	**	1.40	②>① ②>③
WS17	3.34	1.34	3.57	1.44	3.88	0.94	2.22	1.28	3.63	1.11	10.95	**	1.41	①>③ ②>③ ④>③
WS18	2.86	1.13	2.74	1.10	3.03	1.00	2.26	1.23	3.37	0.97	5.23	**	1.15	②>③ ④>③ ④>①
WS19	3.33	1.44	3.35	1.61	3.75	1.22	2.59	1.45	3.56	1.31	3.75	*	1.93	②>③ ④>③
WS20	3.06	1.17	3.04	1.22	3.25	1.05	2.44	1.28	3.44	0.93	4.07	**	1.26	②>③ ④>③
WS21	3.28	1.07	3.48	0.99	3.69	0.90	2.63	1.15	3.30	0.99	5.80	**	1.01	①>③ ②>③ ④>③
WS22	3.24	1.15	3.17	1.07	3.59	1.04	2.67	1.24	3.44	1.09	3.81	*	1.24	②>③ ④>③
WS23	3.01	1.10	3.13	1.06	3.38	0.87	2.33	1.27	3.15	0.95	5.39	**	1.08	①>③ ②>③ ④>③
WS24	3.28	1.15	3.74	1.14	3.59	0.87	2.59	1.22	3.22	1.09	6.01	**	1.16	①>③ ②>③ ④>③
WS25	3.62	1.25	3.78	1.13	4.09	0.86	2.89	1.50	3.67	1.21	5.29	**	1.40	①>③ ②>③ ④>③
WS26	3.45	1.32	3.48	1.44	3.84	1.08	2.96	1.45	3.44	1.25	2.24	+	1.69	②>③
WS27	2.98	1.10	2.61	1.03	3.06	0.95	3.04	1.43	3.15	0.91	1.18	NS	1.20	NONE
WS28	2.81	1.21	2.87	1.25	2.94	1.19	2.19	1.08	3.22	1.12	3.90	*	1.34	①>③ ②>③ ④>③

+ .05 < p < .10 * p < .05 ** p < .01

between the upper-girl group and the lower-boy group, though no significant differences were seen between the upper-girl group and the upper-boy group.

As given in Table 3, no significant differences were found in items 2, 10, 14, and 27 of writing strategies (item 2: $F_{3,105}=1.75$, NS; item 10: $F_{3,105}=1.45$, NS; item 14: $F_{3,105}=1.29$, NS; item 27: $F_{3,105}=1.18$, NS). However, other 24 items showed significant differences between the upper-girl group and the lower-boy group, though only items 7 and 16, out of 24 items, showed significant differences between the upper-girl group and the upper-boy group.

Based on the findings above, it was found that gender influenced the use of learning strategies, as pointed out by Ellis (1996). Thus, gender should be taken into consideration when designing peer scaffolding of learning strategies. In other words, it would be necessary for portfolio designers to divide and place the upper-girl learner(s) into each group for group-conferencing.

4.3 The Relationships Between the Learning Strategies of the Upper Writing and Lower Writing Groups and Affective Factors

First of all, a factor analysis was performed with 68 items. The factors extracted were: 4 factors for writing strategies; 2 for metacognitive strategies; 2 for learning style; 4 for motivation, and; 5 for personality, respectively. Based on the items included in all the factors stated above, they were named as shown in Table 4.

Next, considering the scores of writing as dependent variables, 4 factors of writing strategies, 2 factors of metacognitive strategies, 2 factors of learning styles, 4 factors of motivation, and 5 factors of personality as independent variables, a stepwise regression procedure was conducted. As a result, the following factors were extracted to affect the scores of writing of all students and the upper and lower groups at a 5% level, respectively, as indicated in Table 5.

As Table 5 shows, the types of affective factors evoking the strategies used by the upper group were different from the ones used by the lower group. Consequently, it can be judged that affective factors do not have to be paid special attention when peer transfer of metacognitive and writing strategies is expected as scaffolding. Therefore, it is thought unnecessary to consider affective factors, such as learning style, motivation, and personality, in terms of grouping learners for group-conferencing in the authors' follow-up study using portfolios in near future.

5. Suggestions for Further Research

First of all, when thinking of grouping learners for group-conferencing, it was shown that one group should include upper-group learners and lower-group learners,

Table 4: Factors of Metacognitive and Writing Strategies, Learning Style, Motivation and Personality

Metacognitive Strategies		Motivation	
Factor 1	Planning and Concentration	Factor 1	Integrative Motivation
Factor 2	Pursuing Reasons	Factor 2	Satisfying One's Pride
Writing Strategies		Factor 3	Awareness of Good Marks
Factor 1	Process Writing-directed	Factor 4	Instrumental Motivation
Factor 2	Utilization of Textbooks and Study Aids	Personality	
Factor 3	Utilization of Dictionaries/Asking for Help	Factor 1	Extroversion
Factor 4	Utilization of What Has Been Learned	Factor 2	Self-esteem
Learning Style		Factor 3	Risk-taking
Factor 1	Experience-focused Style	Factor 4	Ambiguity Tolerance
Factor 2	Auditory-visual Style	Factor 5	Attitude toward Authority

Table 5 : The Results of Regression Analysis

Name of Factor	All (N=109)	Upper Group (N=55)	Lower Group (N=54)
Metacognitive Strategies 1: Planning and Concentration	Risk-taking Gender	Satisfying One's Pride	Experience-Focused
Metacognitive Strategies 2: Pursuing of Reasons	Integrative Motivation Attitude toward Authority	Self-esteem Experienced Style	Instrumental Motivation
Writing Strategies 1: Process Writing-directed	Auditory-visual Style Awareness of Good Marks	Self-esteem Risk-taking Integrative Motivation	Satisfying One's Pride Extroversion
Writing Strategies 2: Utilization of Textbooks and Study Aids	Integrative Motivation Instrumental Motivation Risk-taking	Ambiguity Tolerance(-) Experience-Focused Auditory-visual Style Integrative Motivation (-)	Instrumental Motivation Attitude toward Authority
Writing Strategies 3: Utilization of Dictionaries / Ask for Help	Gender Experience-focused Style Extroversion	Auditory-visual Style Satisfying One's Pride	Gender
Writing Strategies 4: Utilization of What Has Been Learned	Self-esteem	Instrumental Motivation	Integrative Motivation Self-esteem

as well as boys and girls. However, the optimal number of one group should be further investigated, though the number of the whole class should be taken into consideration.

Secondly, in learning of writing English using portfolios, group activities other than conferencing are recommended to be conducted. Thus, it should be further discussed whether grouping learners for group-conferencing could also be effective for these activities.

Thirdly, in group-conferencing, scaffolding can be expected to occur in learning contents other than learning strategies. It would be necessary to investigate what these learning contents could be.

Finally, in 4.1, some learning strategies were found to be less frequently used either by upper-group learners or by lower-group learners. It means that peer-scaffolding cannot be expected at group-conferencing. So, it is necessary to think how these strategies should be explained to the learners.

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