Changes in and Factors Affecting Peer Response Orientation among University Writing Course Students*

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The present study assessed peer response orientation among students of a university writing course utilizing peer response sessions. An original questionnaire survey was conducted at the time of the initial and the final class. Exploratory and confirmatory factor analyses identified 3 factors affecting peer response orientation: peer response affinity, reluctance to disclose opinions and discomfort in accepting opinions. Peer response affinity was significantly higher and reluctance to disclose opinions and discomfort in accepting opinions were significantly lower at the final class than at the initial class. However, students with low peer response affinity or high discomfort in accepting opinions gave significantly lower evaluations of peer responses compared to other students. Conversely, the results of a writing competency test revealed significantly higher writing scores after the course regardless of peer response affinity, reluctance to disclose opinions and discomfort in accepting opinions.

Keywords: Writing course, Peer response, Peer response orientation, Collaborative learning, Covariance structure analysis, Course evaluation

1. INTRODUCTION

Traditionally, writing is an internal activity conducted by individuals (Inoshita 2008). However, in the Government Course Guidelines for Japanese Language at elementary school, junior high school, and senior high school published in 2008 and 2009, an item on teaching related to interaction with others was established in the “writing” section. For example, the following item on teaching was developed for second-year junior high school students: “To expand the students’ thinking by having them read one another’s written compositions, state their opinions and provide suggestions on the composition’s structure, the way materials are utilized and so on” (MEXT, 2011). This learning activity, whereby learners read and discuss each other’s writing, is known as “peer response” (Hirose 2007). Peer response involves improving writing ability through exchange of opinions with others and is a relatively new learning activity in writing courses.

At the university level, peer response has been implemented in Japanese language education with international students since about 2000 (e.g. Ikeda 1999a, 1999b, Sugiyama 1999, Inoshita 2002, Harata 2006a, 2006b, 2008, Tanaka 2008). However, it was not until the mid-2000s that peer response started to be incorporated into writing classes in Japanese at universities for native Japanese speakers (e.g. Oshima 2005, Oshima 2007, Fukaya 2009, Tominaga 2011).

Peer response practice research can broadly be divided into product analysis, process analysis, and cognitive evaluation analysis. Product analysis aims to ascertain the effectiveness of peer response through evaluation and analysis of written work (products) by learners. For example, Tanaka (2008) compared the writing of international students before and after peer review. Results of evaluation from the three viewpoints of “content”, “structure”, and “language competence” showed significant improvement in overall results and “content” from before to after peer response. Harata (2006a) divided international students into a peer response group and a teacher feedback group, with results suggesting that after six sessions of essay writing guidance, the peer response group showed positive effects on essay writing in terms of content.

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Process analysis aims to identify the effects of peer response by analyzing the type of discourse engaged in during peer response and the type of feedback given. For example, Harata (2006b) paired international students with different levels of Japanese language competence together and conducted peer response sessions. Conversation analysis revealed that through repeated peer response, even pairs with different language competence levels were able to support each other equally.

Cognitive evaluation analysis by learners aims to clarify the ways in which peer response is perceived by learners through analysis of class evaluation questionnaires and so on. Cognitive evaluation by learners tends to be generally high in any learning situation. A study by Oshima (2005) of university students speaking Japanese as a native language showed that students considered the sense of satisfaction on submitting a report the most enjoyable thing, while peer response activities were the second most enjoyable. Tominaga (2011) implemented peer response five times during a half-year period. A questionnaire survey asking about satisfaction with peer response showed that all sessions scored high on satisfaction (3.79-4.21) on a 5-point evaluation. In the first peer response session, learners were satisfied with talking to new people and getting to know them, but from the second time onward, they expressed satisfaction with the core activities of sharing opinions with each other and being able to improve their writing.

The practice research described above shows that peer response is effective for improving writing ability and improving levels of satisfaction. Peer response may therefore be a useful way to improve writing courses at university.

However, several issues may arise with the use of peer response. One study showed that although most learners responded positively to peer response, others did not because they were unable to express their opinions well (Tominaga 2011). There were also learners who found feedback with learners of the same level difficult (Inoshita 2002). Ikeda and Tateoka (2007) indicated that learners in East Asian countries found it harder than European and American learners to get used to peer response. In European and North American countries, discussion among learners is actively encouraged from the early years of elementary school, and learners are used to participatory and deliberative learning activities. In contrast, teacher-centered whole class lessons are the norm in East Asian countries, and learners are not used to participatory, deliberative learning activities such as peer response. For this reason, it is possible that some learners may be positive about peer response due to its novelty and others may be negative about it because they are not used to it. It can be assumed that such learner features will impact the effectiveness of peer response.

The practice research discussed above (Oshima 2005, Tominaga 2011, Inoshita 2002) showed that most learners were satisfied with peer response, but free responses on the post-class questionnaire showed that some learners could not get used to peer response and indicated that this method did not seem suited to them. However, there is no reference to the link between learners’ propensity toward peer response and the learning effectiveness of peer response or improvement of writing ability. Within this context, this study first created and implemented a peer response orientation questionnaire to evaluate whether learners were suited to peer response or not. Through implementing and analyzing a survey conducted before and after class, it was possible to identify factor structure for peer response orientation, and the reliability and validity of the peer response orientation questionnaire were confirmed. The next step was to ascertain whether peer response orientation changed after the class, and whether evaluation of peer response and writing ability varied according to higher or lower scores on peer response orientation. Additionally, based on questionnaire results, points to be considered when conducting peer response were examined. By using the peer response orientation questionnaire, it becomes possible to establish whether or not learners are suited to peer response before the class, and appropriate measures can then be examined.

2. CLASSES

2.1. Overview

The study was undertaken in a writing course (2 classes of 80 students) with students in the Faculty of Information of a private university in the metropolitan area in the fiscal year 2010. The class was an intensive course that took place over 3 days. It was a blended learning, combining on-demand lectures through e-learning with peer response. Each unit followed the pattern of 1) on-demand lectures through e-learning; 2) working on writing exercises; 3) peer response related to writing exercises; and 4) teacher
feedback. The schedule of classes is shown in Table 1. The content is described below.

2.2. Orientation

It was assumed that there would be students with no experience of peer response; thus, during the orientation, an explanation of peer response was given, and photos of peer response activities from the previous year were shown. After this, the Kiss-18 test (Kikuchi’s Social Skill Scale - 18-item version) (Kikuchi 1988), the peer response orientation questionnaire, and a written composition test were administered. All were administered through REAS (Real time Evaluation System), and students were required to respond during class time. Response data were quantified automatically and downloaded to a CSV file.

Kiss-18 is a questionnaire measuring interpersonal social skills. Higher total scores on responses indicate higher levels of interpersonal social skills. Following Tominaga (2011), peer response groups were formed according to Kiss-18 results. Each group consisted of five people. Groups were formed to include a mixture of learners, from those with high total Kiss-18 scores to those with low Kiss-18 scores, to ensure that differences in interpersonal social skills between different groups were minimal. Specifically, spreadsheet software was used to order learners according to total Kiss-18 score and divide them into groups by order. Finally, Kiss-18 mean scores for each group were calculated, and members were rearranged until mean scores were roughly the same.

2.3. e-learning materials

Three to five e-learning items, each requiring approximately 5–20 minutes, were prepared for each unit. Materials consisted of four units. Unit 1 dealt with basic techniques to make writing easily comprehensible. Units 2 to 4 dealt with descriptive patterns for paragraph writing (enumeration, opinions and reasons, definitions). Descriptive patterns were not only explained, but were used in specific examples, showing simulations of the following process of writing: 1) elicit information from source materials; 2) organize information; 3) select necessary information; 4) decide order of explanation; 5) use descriptive patterns to write; and 6) revise grammar and expression.

Learners studied the e-learning materials individually at home or in the computer rooms at university, answered quizzes throughout, and took

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<tr>
<th>Table 1. Schedule of class implementation</th>
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<td>1st day</td>
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<td>AV</td>
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<tr>
<td>&lt;Whole Class : Orientation&gt;</td>
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<td>• contents, schedule</td>
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<tr>
<td>• Kiss-18 test</td>
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<tr>
<td>• Peer response orientation questionnaire (pre)</td>
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<td>• Written composition test (pre)</td>
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<td>&lt;Individual Learning&gt;</td>
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<td>• Unit 1 “The basic techniques to make writing easily comprehensible” (by e-learning)</td>
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notes as they listened and watched, so that actual learning time was longer than time taken for e-learning materials. After engaging with the e-learning materials, learners worked on writing exercises according to the writing process described. Learners who progressed more quickly were encouraged to progress to the next unit.

2.4. Peer response

Peer response was performed mainly in the classroom. As members were generally meeting for the first time, a simple game was used before peer response each time to help them open up to each other.

Peer response was conducted in accordance with the writing process. Task results from each step of the writing process were shared within the group, and discussed. After discussion, learners undertook correction of each other’s grammar and expression. Peer response time was approximately 1 hour. After finishing peer response, learners revised their own writing and resubmitted their work on the Learning Management System (LMS).

2.5. Teacher feedback

Resubmitted work was then given feedback by the teacher and was returned during the next classroom session. The exercise in the final was returned by e-mail.

Feedback was provided using the comment function of a word processing software package. Points checked included whether the writing included necessary and sufficient content, whether it was ordered in an easily comprehensible way, whether the descriptive patterns covered in the unit had been learned, and whether the grammar and expressions were correct. If these elements were achieved, praise was given; if not, problems were identified and suggestions for revision were provided.

3. EVALUATION METHODS

3.1. Peer response orientation questionnaire

In the creation of the peer response orientation questionnaire, an open-ended questionnaire concerning peer response was used for reference. This questionnaire had been used with 14 vocational college students (all women, mean age 19.43 years, SD=0.49), who had engaged in peer response over approximately 18 months in a written expression course. With the guidance of a university professor specializing in psychology who had experience creating scales, the teacher (author) categorized free responses using the KJ method and created 32 question items.

The peer response orientation questionnaire was implemented before the beginning of the first class (pre) and at the end of the last class (post). Answers were scored from 1 point to 5 points ranging from “not at all”, “not much”, “cannot say either way”, “to some extent”, and “very much”. As it was assumed that there would be learners with no experience of peer response, the following definition was given at the beginning of the questionnaire: “Peer response (discussion between learners about their own writing”).

3.2. Written composition test

To assess writing ability, a written composition test was administered before the beginning of the first class (pre) and at the end of the last class (post). The content was a recommendation for a notebook computer. Students read a 1-page A4 information sheet describing the requirements of the client and specifications of two models of notebook computers, and wrote a proposal for a model responding to the client’s requirements, explaining reasons for their choice of model. The designated reader was the person in charge at the client’s company. Time allowed for response was 30 minutes.

Four items were scored on the written composition test: (1) form of writing; (2) required content; (3) easily comprehensible order; and (4) correct grammar and expression. In product analysis of peer response, Tanaka (2008) evaluated writing in regard to “content”, “structure”, and “language competence.” “Form of writing” and “easily comprehensible order” corresponded to “structure”, whereas “required content” corresponded to “content” and “correct grammar and expression” corresponded to “language competence”. “Form of writing” was scored according to whether descriptive patterns of paragraph writing had been used in writing. “Required content” was scored according to whether the writer had elicited necessary information from the information sheet and had transmitted this clearly, taking account of the reader’s knowledge. “Easily comprehensible order” was scored according to whether the reader could start reading from the beginning and understand the content without difficulty through a natural flow of organized information. “Correct grammar and expression” was scored according to errors in grammar and expression.

Scoring was done by two markers: the class
teacher (author) and a graduate of Master’s programs (Japanese education major). The teacher and Master’s graduate had received training in teaching and scoring writing through participation in a program teaching writing to students at another university. The author had spent approximately 4 years in this program, and the Master’s graduate had spent approximately 2 years. The author created a 3-stage rubric for scoring items (1) to (4), and this was used as the basis for scoring. If there was any doubt about the scores, the markers conferred as needed.

3.3. Questionnaire evaluating peer response

At the end of the last class, a questionnaire evaluating peer response was also administered. Question items for the evaluation questionnaire were created using the ARCS model (Keller 2009). The ARCS model is based on the concept of learning motivation and is used for class evaluation and class improvement. ARCS is an acronym formed from the initial letters of the constituent elements of attention, relevance, confidence, and satisfaction. Based on these four elements, the following evaluative items were designed for peer response.

- Did participation in peer response raise your interest in the content of the class?
- Do you think participation in peer response will be useful to you in writing?
- Has participation in peer response increased your confidence in writing?
- Were you satisfied with peer response?

Responses were scored from 1 point to 7 points, and were used to indicate learners “level of attention”, “level of relevance”, “level of confidence”, and “level of satisfaction”. Higher scores indicated greater satisfaction with peer response. Finally, there was a free response section for opinions and comments regarding the course as a whole (e-learning on-demand lectures, writing exercises, peer response, teacher feedback). The evaluation questionnaire, like the peer response orientation questionnaire and the written composition test, was created using REAS and was administered online during class time.

4. RESULTS

4.1. Factor selection (exploratory factor analysis)

Of the 160 students registered for the course, 130 (response rate 81.25%, 98 men, 32 women, mean age 19.20 years, $SD=1.36$) responded to the pre-questionnaire, and 111 (response rate 69.38%, 85 men, 26 women, mean age 19.30 years, $SD=1.55$) responded to the post-questionnaire. None of the respondents to the pre-questionnaire had any experience with peer response. This indicates that their responses at the time of the pre-questionnaire were likely based on the explanation at orientation and the definition of “peer response (discussion between learners about their own writing)” given in the peer response orientation questionnaire. Responses to the post-questionnaire were based on experience of peer response in classes. Exploratory factor analysis was therefore carried out using post-questionnaire response data ($n=111$).

G-P (good-poor) analysis and I-T (item total) correlation analysis on question items in the post-questionnaire response data were carried out, and showed that Item 5 (It is unpleasant when people who don’t take it seriously are in the peer response group) and Item 20 (I try not to hurt others when I express my opinions) were not significant. These two items were deleted, and factor analysis was carried out on the remaining 30 items (maximum likelihood method, promax rotation). This resulted in selection of three factors from substantial drops on a scree plot. The number of factors was designated as three, and factor analysis was conducted, eliminating items with a loading of less than .50 or multiple loading of over .50; we thus obtained 16 interpretable items in three factors. The cumulative contribution ratio through the three factors was 59.81% (See Table 2).

4.2. Examination of goodness of fit of factor structure (confirmatory factor analysis)

To examine the goodness of fit of factor structure of the 16 items in three factors elicited based on exploratory factor analysis, confirmatory factor analysis was conducted. IBM SPSS Amos Version 19.0 (IBM) was used for analysis. Assuming that peer orientation is structured by the three factors obtained through exploratory factor analysis, each factor was assumed to be a latent variable. Observed variables were set as items with a loading of over .50 on each factor, and loading of less than .25 on other factors. This criterion led to the elimination of Item 13, “If I am not sure about something, I make a point of asking someone”, leaving 15 items as observed variables.

Using covariance structure analysis to examine goodness of fit of the model resulted in goodness of fit indices of $GFI=.881$, $AGFI=.836$, $CFI=.947$, and $RMSEA=0.59$, which were somewhat lower.
than Toyoda’s (2007) indices. A new path was added in accordance with adjustment indications, and analysis was conducted once more. This resulted in goodness of fit indices of GFI=.916, AGFI=.878, CFI=.999, and RMSEA=.010, obtaining a better fit than for the first model (see Fig. 1). These results meet the indices set by Toyoda (2007), indicating goodness of fit. Cronbach’s alpha coefficient was .857 for Factor 1, .798 for Factor 2, and .790 for Factor 3.

Pre-questionnaire responses were added to the model in Fig. 1, and confirmatory factor analysis was conducted. This resulted in goodness of fit indices of GFI=.900, AGFI=.855, CFI=.949, and RMSEA=.055. Compared with the post-questionnaire, goodness of fit was somewhat lower, but Toyoda’s (2007) indices were met. It was judged from these results that there was no great difference between factor structures revealed by pre and post-questionnaires, and the model in Fig. 1 was adopted as the factor structure for peer response orientation in this study.

Factor names were determined as below. Factor 1 was named “peer response affinity”, comprising seven items, such as “peer response discussion is enjoyable” and “I think my ability in written composition improves through peer response.” Factor 2 was named “reluctance to disclose opinions”, comprising four items, such as “I find it difficult to talk about my own ideas” and “I find it difficult to express my opinions on the writing of members of my group”. Factor 3 was named “discomfort in accepting opinions”, comprising four items such as “I don’t like it when other members of the group point out problems in my writing” and “I don’t like it when people are against my opinion”.

Significant negative correlations were found between peer response affinity and reluctance to disclose opinions, and between peer response affinity and discomfort in accepting opinions. A significant positive correlation was also found between reluctance to disclose opinions and discomfort in accepting opinions (see Fig. 1).

4.3. Pre/post-questionnaire comparison of each factor

Mean scores of sub-items of each factor were treated as sub-scale scores, and sub-scale scores in pre and post-questionnaires were compared for each factor (see Fig. 2). To equalize the number of times of participation in peer response, 104 learners who had responded to both pre and post-questionnaires and had participated in all four peer response sessions were used for analysis.

Results of paired t-test proved significant at the 1% level for peer response affinity ($t(103)=14.94$, $p<.01$), reluctance to disclose opinions

| Table 2. Peer response orientation factors elicited (exploratory factor analysis results) |
|----------------------------------|----------------|----------------|
| Factor 1 | Factor 2 | Factor 3 |
| 29 Peer response discussion is enjoyable. | .794 | -.045 | -.045 |
| 1 I enjoy meeting various people through peer response. | .778 | -.041 | .087 |
| 3 I think my ability in written composition improves through peer response. | .737 | .167 | -.148 |
| 6 I enjoy hearing opinions on my writing from members of my peer response group. | .671 | .043 | -.084 |
| 2 I want to improve my writing ability by having other people read my writing. | .606 | -.060 | .009 |
| 27 It is useful to hear opinions on my writing from members of my peer response group. | .603 | -.036 | -.063 |
| 7 I think it is useful to give my opinions in peer response. | .585 | -.095 | .192 |
| 30 I find it difficult to talk about my own ideas. | -.015 | .803 | -.059 |
| 4 I find it difficult to express my opinions on the writing of members of my group. | .130 | .738 | .063 |
| 18 I try to express opposing opinions clearly. | .088 | -.688 | .096 |
| 9 I am embarrassed to have other people reading my writing. | .001 | .581 | .232 |
| 13 If I am not sure about something, I make a point of asking someone. | .279 | -.517 | .056 |
| 26 I don’t like it when other members of the group point out problems in my writing. | -.073 | .072 | .788 |
| 11 I don’t like it when people are against my opinion. | .195 | .152 | .723 |
| 19 Comments from people who have a similar or lower level of writing ability to me are not useful. | -.129 | -.113 | .647 |
| 17 I get irritated when one of the group members has low ability. | -.021 | -.082 | .644 |
(t(103)=8.76, p<.01), and discomfort in accepting opinions (t(103)=6.59, p<.01). The mean for peer response affinity was 3.19 (SD=.69) in the pre-questionnaire, but rose to 4.10 (SD=.55) in the post-questionnaire. The mean for reluctance to disclose opinions fell from 3.45 (SD=.78) to 2.80 (SD=.88). The mean for discomfort in accepting opinions fell from 2.43 (SD=.76) to 1.95 (SD=.72).

4.4. Relationship between peer response orientation and written composition test

Consistency of scores between two markers was 75.96%. For each item, the mean of the scores from both markers was taken, and the total score for the four items was the score for the written composition test. Accordingly, the minimum score for the written composition test was 4, and the maximum was 12.

The pre-class test mean of the 104 learners who took both the pre- and post-class writing composition tests and participated in all four peer response sessions was 5.12 (SD=1.27), and the post-class test mean was 8.37 (SD=1.89).

To investigate differences in written composition results according to high or low peer response orientation, learners were divided into three categories depending on their peer orientation sub-scale scores: the high group, the medium group, and the low group. In doing this, learners were divided so that the number of people in each group was more or less equal, and learners with the same scores were in the same group. This resulted in peer affinity groups of 34 people in the

![Diagram](image-url)

Fig. 1. Peer orientation model (confirmatory factor analysis results) 

χ²(83)=83.91, CFI=.916, AGFI=.878, CFI=.999, RMSEA=.010. Only significant paths are shown.
high group, 34 people in the medium group, and 36 people in the low group; reluctance to disclose opinions groups of 40 people in the high group, 24 people in the medium group, and 40 people in the low group; and discomfort in accepting opinions groups of 35 people in the high group, 32 people in the medium group, and 37 people in the low group.

Pre/post-class test results for the high, medium, and low groups on each factor were compared (see Table 3). Two-way ANOVA (factors: groups and test implementation period) showed that the main effect of peer response affinity group was not significant \((F(2,101)=1.93, \text{ns})\), and that the main effect of test implementation period was significant at the 1% level \((F(1,101)=252.08, p<.01)\). Interaction was not significant \((F(2,101)=0.56, \text{ns})\). Similarly, the main effect of group for reluctance to disclose opinions was not significant \((F(2,101)=1.30, \text{ns})\), and the main effect of test implementation period was significant at the 1% level \((F(1,101)=234.39, p<.01)\). Interaction was not significant \((F(2,101)=0.12, \text{ns})\). The main effect of group for discomfort in accepting opinions was not significant \((F(2,101)=0.52, \text{ns})\), and the main effect of test implementation period was significant at the 1% level \((F(1,101)=252.84, p<.01)\). Interaction was not significant \((F(2,101)=0.48, \text{ns})\).

**4.5. Evaluation of peer response according to learner orientation**

The mean for each of the four items evaluating peer response was calculated. The mean for attention was 5.72 (SD=1.11), relevance was 5.87 (SD=1.04), confidence was 5.30 (SD=1.03), and satisfaction was 5.64 (SD=1.19).

To investigate differences in evaluation of peer response according to high or low peer orientation, each factor was compared in the high, medium, and low groups for attention, relevance, confidence, and satisfaction (see Table 4). Single-way ANOVA between groups showed that for peer response affinity, attention \((F(2,101)=24.12, p<.01)\), relevance \((F(2,101)=12.77, p<.01)\), confidence \((F(2,101)=9.05, p<.01)\), and satisfaction \((F(2,101)=13.52, p<.01)\) were all significant at the 1% level. Multiple comparison results (Bonferroni method) showed that the high group and medium group were significantly higher than the low group on all items of attention, relevance, confidence, confidence, and satisfaction.
and satisfaction (MSe=0.86, p<.05; MSe=0.89, p<.05; MSe=0.92, p<.05; MSe=1.15, p<.05). However, there was no significant difference between the high group and medium group.

For reluctance to disclose opinions, attention was significant at the 5% level (F(2,101)=3.43, p<.05), and multiple comparison results (Bonferroni method) showed that the high group was significantly lower than the low group (MSe=1.20, p<.05), but there was no significant difference between the high group and medium group or between the medium group and low group. Relevance was marginally significant (F(2,101)=3.10, p<.10), but there was no significant difference between groups on multiple comparison (Bonferroni method). Confidence (F(2,101)=1.61, ns) and satisfaction (F(2,101)=0.39, ns) were not significant.

For discomfort in accepting opinions, attention was significant at the 5% level (F(2,101)=4.81, p<.05). Multiple comparison results (Bonferroni method) showed that the high group and medium group were significantly lower than the low group (MSe=1.04, p<.05), but there was no significant difference between the high group and medium group or between the medium group and low group. Confidence (F(2,101)=0.97, ns) was not significant. Satisfaction was significant at the 5% level (F(2,101)=3.35, p<.05). Multiple comparison results (Bonferroni method) showed that the high group was significantly lower than the low group (MSe=1.37, p<.05), but there was no significant difference between the high group and medium group or between the medium group and low group.

5. DISCUSSION

5.1. Factor structure of peer response orientation

As a result of exploratory factor analysis and confirmatory factor analysis, the three factors of peer response affinity, reluctance to disclose opinions, and discomfort in accepting opinions were confirmed for peer response orientation. Goodness of fit indices through covariance structure analysis met Toyoda’s (2007) indices for both before peer response (pre) and after peer response (post), confirming construct validity. Cronbach’s alpha was more than .790 for each factor, confirming internal consistency.

Factor 1, peer response affinity, was a positive factor for peer response activities and peer response effectiveness. Learners enjoy discussions with group members during peer response and feel that hearing various opinions from other members is useful for improving their writing. In contrast, Factors 2 and 3, reluctance to disclose opinions and discomfort in accepting opinions respectively, are negative factors in peer response activities and peer response effectiveness. Learners may find it difficult to express their own opinions or do not like it when other members of the group point out problems in their writing. They also feel that comments from people who have a similar or lower level of writing ability are not useful. This seems to be why both factors exhibited a negative correlation with the positive factor of peer response affinity. It also explains why reluctance to disclose opinions and discomfort in accepting opinions exhibited a positive correlation.

5.2. Changes in peer response orientation before and after peer response

Comparison of sub-scale scores on peer

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<tr>
<th>Table 4. Peer orientation by high/low in post-questionnaire</th>
<th>Evaluation of peer response</th>
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<tbody>
<tr>
<td>Peer response affinity</td>
<td>attention</td>
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<tr>
<td>high (n=34)</td>
<td>6.29 (0.86)</td>
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<td>medium (n=34)</td>
<td><strong>6.06 (0.73)</strong></td>
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<tr>
<td>low (n=36)</td>
<td>4.86 (1.11)</td>
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<tr>
<td>Reluctance to disclose opinions</td>
<td>high (n=40)</td>
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<tr>
<td>medium (n=24)</td>
<td><em>5.54 (0.87)</em></td>
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<tr>
<td>low (n=40)</td>
<td>6.08 (1.08)</td>
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<tr>
<td>Discomfort in accepting opinions</td>
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</tr>
<tr>
<td>medium (n=32)</td>
<td><em>5.50 (1.06)</em></td>
</tr>
<tr>
<td>low (n=37)</td>
<td>6.16 (0.92)</td>
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() Standard deviation  **p<.01  *p<.05  *p<.10
response orientation before experience of peer response and after four experiences of peer response showed that peer response affinity rose significantly, while reluctance to disclose opinions and discomfort in accepting opinions fell significantly. These results suggest that for most learners, the actual experience of participating in peer response decreased negative views of peer response activities and the effectiveness of peer response and perceptions of peer response became more positive than before peer response.

This finding was supported by the comments provided in the free response section of the evaluation questionnaire in the final class. Comments related to peer response (Learners (1) to (8)) were selected from post-class comments written by learners who showed an increase in peer response affinity, as well as weakening of reluctance to disclose opinions or discomfort in accepting opinions. (Underlining is by author, figures in parentheses, from left to right, are post minus pre values for peer response affinity, reluctance to disclose opinions and discomfort in accepting opinions, respectively).

Learner (1): “At first I was nervous about talking in groups. But once I actually tried it, it was quite enjoyable, and it was good.” (1.14, 0.00, -0.50)

Learner (2): “At first, I didn’t like talking to people I didn’t know in peer response, but once I actually tried it and had other people pointing out the bits of my writing that weren’t right, I could write better, so that was good.” (1.58, -2.00, 0.00)

Learner (3): “I found out about my own mistakes through peer response.” (2.00, 0.00, -2.50)

Learner (4): “I found out clearly which parts of my writing were good and which were bad through feedback and peer response.” (0.86, -0.25, -1.25)

Learner (5): “I think I definitely improved the ability to write essays in comparison to before I took part in the class, and more than anything, peer response was fun. It made me realize the importance of exchanging opinions.” (1.71, -1.75, -1.00)

Learner (6): “Doing peer response meant that I could interact with people I didn’t know in a friendly atmosphere, and seeing other people’s writing was helpful.” (1.14, -0.50, -1.00)

Learner (7): “The group activities were more useful than I thought they would be. I think I improved my lack of ability in writing; I was lucky with my group members.” (1.00, -0.50, -0.25)

Learner (8): “My peer response group was good, and I didn’t really get nervous, even though I usually get so tense I can’t do anything. I think I could point out good points and bad points.” (1.42, -0.25, 0.25)

Learners who had no experience of peer response tended to experience the same kind of anxiety and reluctance about peer response as Learners (1) and (2) at first, but once they took part, realized that when they “actually tried it, it was quite enjoyable”. Like Learners (3), (4), (5), and (6), they could find out the problems in their own writing through peer response, and seemed to realize the effectiveness of peer response through exchange of opinions. However, the fact that the mean for reluctance to disclose opinions was still 2.80 after the class suggests that they did not reach the point of being able to express their own opinions actively.

Whether or not peer response went well was largely dependent on the atmosphere of the group and the attitude of each member regarding participation, so that discussion was effective when members got on well, as in the cases of Learners (7) and (8); however, peer response may not have been implemented as well in some other groups.

5.3. Differences in writing ability according to high/low peer response orientation

Scores on the written composition test were significantly higher after the course than before, but there was no difference on high/low peer response orientation factors. This finding suggests that learners’ writing ability improved after the course regardless of whether they were high or low on each factor in peer response orientation.

5.4. Differences in evaluation according to high/low peer response orientation

Analysis was conducted to see if there were differences in evaluation of peer response according to high/low peer response orientation. Results showed that learners with low peer response affinity were significantly lower on attention, relevance, confidence in writing, and satisfaction than other learners. Even after experiencing peer response, they did not perceive peer response activities or the effectiveness of peer response positively, and their evaluation of peer response was low.

Compared with learners who scored low on discomfort in accepting opinions, those who scored high were low on attention, relevance, and
satisfaction. That is, learners who were unable to accept opinions from other members of the group exhibited a lower evaluation of peer response than learners who welcomed opinions, even after experiencing peer response.

The free response comments of learners in the high group for discomfort in accepting opinions showed comments (Learners (9) to (12)) that evaluated e-learning and teacher feedback more highly than peer response.

Learner (9): “It was extremely good to receive feedback. I got questions answered that we couldn’t solve in the group, and gained a little confidence in my writing ability. My way of doing it so far had been explained through e-learning and clearly understanding the roots of why I was mistaken and so on were good.”

Learner (10): “I got feedback directly from the teacher on points I hadn’t realized, and it was very easy to understand.”

Learner (11): “I wasn’t very confident in writing, but as the classes went on, I think I acquired some ability in writing. Getting feedback on the writing I had done was helpful for being able to change my way of doing my own writing.”

Learner (12): “Getting feedback from the teacher made it possible to understand the points I found particularly difficult when I was writing.”

Learners (9), (10), (11) and (12) seemed to find satisfaction in receiving follow-up feedback from the teacher on points they had not resolved or not noticed during peer response. In Inoshita’s (2002) practice research, learner comments included, “it is difficult to check other students’ work when we are the same level”. One of the problems of peer response is that issues remain that cannot be resolved by learners or are not noticed by them. Teacher feedback after peer response resolves this problem, and may be linked to reduction of the dissatisfaction of learners with high discomfort in accepting opinions.

Learners with high reluctance to disclose opinions scored lower on attention than those with low reluctance to disclose opinions. However, there was no difference between groups on relevance, confidence, and satisfaction. Even learners who find it difficult to express their opinions fully can hear various opinions from other group members in peer response. In addition, just seeing the writing of other people enables learners to learn ideas and ways of writing that are different from theirs. This seems to be why relevance, confidence, and satisfaction are no different regardless of high or low scores on reluctance to disclose opinions.

6. SUMMARY AND FUTURE RESEARCH

A study using a peer response orientation questionnaire was conducted with learners engaging in peer response in a writing course. The following points became clear as a result of the study.

1) Factors elicited for orientation to peer response were peer response affinity, reluctance to disclose opinions, and discomfort in accepting opinions.

2) Comparison of sub-scale scores for each factor at the first class and the final class showed a significant increase in peer response affinity from the first class to the final class. There was a significant decrease in reluctance to disclose opinions and discomfort in accepting opinions from the first class to the final class. This suggests that participation in peer response leads to an easing of negative views of peer response activities and peer response effectiveness and to a more positive understanding of peer response.

3) After dividing factor sub-scale scores into a high group, medium group, and low group, results of comparison of scores of the written composition test before and after the course showed that there was significant improvement from before to after the course, but that there was no difference according to high/low sub-scale scores. This suggests that writing ability improves regardless of high or low peer response orientation.

4) The high group on discomfort in accepting opinions was significantly lower than the low group on attention, relevance, and satisfaction. In addition, in free response comments, the high group wrote comments that evaluated e-learning and teacher feedback positively. For learners with high levels of discomfort in accepting opinions, it may be necessary to take measures such as combining peer response with e-learning and teacher feedback, and making learners understand that commenting on other people’s work in peer response is linked to improvement of their own writing ability.

The peer response orientation questionnaire seems to be useful in creating groups. Peer response activities are unlikely to go well in a group where the majority of members have low
peer response affinity and high levels of reluctance to disclose opinions and discomfort in accepting opinions. By conducting the peer response orientation questionnaire before the beginning of classes and ensuring that learners with low peer response affinity and those with high reluctance to disclose opinions and discomfort in accepting opinions are equally balanced when forming groups, it is likely that peer response activities will progress more smoothly.

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