A Research on the Types of the Web Based Corrective Feedback

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Abstract
We have designed and realized a formation evaluation system which provide two types of corrective feedback to understand the difference in the study achievement degree and to find the best appropriate method in accordance with the types of the web-based corrective feedback at this point of time when the importance of feedback is being clearly brought out, as well as the formation evaluation, in the teaching-learning process. In this research work, we have designed and realized a corrective feedback which suggest similar questions repetitively and a ‘corrective feedback which suggest the results’, leading to apply the two types to real lectures to verify the effects. It is expected that the two types can be used effectively in correcting students’ errors and providing them with correct information in the web-based formation evaluation process.

1. Introduction
After the evaluation is accomplished, appropriate feedbacks should be made for the performance. Appropriate feedbacks are different in accordance with the evaluation areas. In the case of knowledge, only the suggestion of right-wrong answers can be a sufficient feedback. In the case of intellectual function, however, the suggestion of right-wrong answers is not sufficient, and the information to correct the error should be provided.

Also, the timing for the feedback should be appropriate. It is important to decide when the correct answer should be provided, after allowing a learner to try to find the right answer repeatedly. Since the excessive requirement for the right answer for a learner can make him experience frustration. We need to let the learner to study through repeated practice for the part of which the learner is supposed to experience problems in understanding or fail to learn.

2. Designing of the Web Based Corrective Feedback

2.1 The Corrective Feedback, Suggesting Similar Questions Repeatedly

The repeated type corrective feedback in the formation evaluation process is a feedback that has similar concept with the wrong answered question and provide the same level of questions repeatedly until a right answer is made. This corrective feedback is a process of problem solving through repeatedly studying of similar level concept, rather than providing information pertaining to the correct answer, to solve the suggested question. [Diagram 1] is showing a feedback design providing similar questions repeatedly in the event a wrong answer has been made for the suggested question.

2.2 Result Suggesting Corrective Feedback

This method is not providing a feedback immediately or the question after solving it. It's a method of providing a feedback for a learner to study by himself for the wrong answered question by visiting the related unit through suggesting the total numbers and the specific number of
questions for the wrong answered questions after solving specific numbers of questions. [Diagram 1] is showing a feedback design to suggest the evaluation result to learners.

3. Effect Analysis for the Types of the Web Based Corrective Feedback

3.1 Study Object

We selected two classes of the first grade of N High School in Ulsan. First, we selected the two same quality groups by analyzing the records of the interim test for Information Industry subject in the previous semester for all 10 classes of the first grade statistically. The two groups can be said as a same quality group since there is no significant difference between G1, G2 before treatment in accordance with Table 1. (p>0.05)

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>39</td>
<td>61.18</td>
<td>16.18</td>
<td>-1.439</td>
<td>0.154</td>
</tr>
<tr>
<td>G2</td>
<td>39</td>
<td>56.15</td>
<td>13.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Feedback Application Object by Type

3.2 Experiment Design

To verify the effect of the feedback, Table 2 was designed.

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>O1</th>
<th>X1</th>
<th>O2</th>
<th>G2</th>
<th>O3</th>
<th>X2</th>
<th>O4</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 Experiment Design Model

O1, O3: preliminary inspection 
O2, O4: ex post facto inspection, 
G1, G2: experiment group 
X1: corrective feedback, suggesting similar questions repeatedly 
X2: result suggesting corrective feedback

4. Result of the Research and its Interpretation

We have implemented the T-inspection to check the influence of the types of feedback on the study performance by the following three methods. The result of analysis is as shown on Table 3.

<table>
<thead>
<tr>
<th>Inspection time</th>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>G1</td>
<td>39</td>
<td>61.15</td>
<td>16.68</td>
<td>-1.439</td>
<td>0.154</td>
</tr>
<tr>
<td></td>
<td>G2</td>
<td>39</td>
<td>56.15</td>
<td>13.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>G1</td>
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<td>71.41</td>
<td>15.47</td>
<td>-3.075</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>G2</td>
<td>39</td>
<td>66.26</td>
<td>16.54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 The result of analysis

The average performance of before-after in G1 increased by 10.26 and that of G2 increased by 4.11. As a result of applying the corrective feedback, suggesting similar questions repeatedly and the result suggesting corrective feedback on the experiment group 1(G1) and the experiment group 2(G2) respectively, the average difference of the two groups showed 11.15. After we implemented the T-inspection to check if the difference in score has the meaningful value, it turned out that it was meaningful. (p<0.05)

According to the result of this research, the corrective feedback, suggesting similar questions repeatedly was more effective than the result suggesting corrective feedback in enhancing the students' study performance.

5. Conclusion and Suggestion

Based on the result of this research work, it turned out that the corrective feedback, suggesting similar questions repeatedly in the web based formation evaluation is pretty effective in enhancing the study performance of students. The result suggesting corrective feedback, on the other hand, has no significant effect.

Accordingly, the corrective feedback, suggesting similar questions repeatedly, is more superior in enhancing the study performance of students than the result suggesting corrective feedback type.

This study is expected to be of much help to design and develop the corrective feedback system to provide opportunity to correct study method, study direction and study error in the web based teaching-learning process.

However, we need to compare and analyze the system based on various variate, as well as researching and developing various types of corrective feedback to meet the individual study level and the characteristics of learners. Besides, we are required to control the variate affecting the study performance of students more strictly and to verify the mechanism more precisely.

6. Reference