We checked out the effect of feedback on both short-term and long-term perspectives. To consider the timing of feedback, autonomy and learning situation over learning. Like that they know the answer, but this effect have disappeared in long-term test. This implies the need as quickly as possible, which started faint and became successively clear. Results show that immediate feedback negatively affected task performance on short-term test because it makes participants feel that they know the answer, but this effect has disappeared in long-term test. This implies the need to consider the timing of feedback, autonomy and learning situation over learning.

This study examined the function of feedback presented during learning situations. The present study was designed to examine that timing of feedback have an influence on learning strategy and learner’s judgment of learning. This study examined the function of feedback presented during learning situations. The present study was designed to examine that timing of feedback have an influence on learning strategy and learner’s judgment of learning.

In the past researches, the aspects of JOL, EOL and FOK was discussed. People have tended to study the judged-difficult-to-learn materials longer than they studied the judged-easy-to-learn materials (Son & Kornel, 2008). The allocation of study time laboratory supported delayed feedback (Metcalfe, 2009). A study that is conducted in the classroom supported immediate feedback, whereas the study in classroom supported delayed feedback.

Immediate feedback vs. Delayed feedback

Immediate feedback
- In behaviorism, feedback should be used to inhibit inaccurate responses and to enhance accurate responses.
- There are a lot of controversy about which timing of feedback is better in learning according to the kind of category. (Maddox, 2003)
- A study that is conducted in the classroom supported immediate feedback, whereas the study in laboratory supported delayed feedback (Metcalfe, 2009).
- The allocation of study time
- People have tended to study the judged-difficult-to-learn materials longer than they studied the judged-easy-to-learn materials (Son & Kornel, 2008).
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The effect of delayed versus immediate feedback on perceptual learning

Participants were asked to write an answer when they seemed to know what the object is. When answer is submitted, feedback is provided instantly. Give the feedback after the test. General feedback situation

<table>
<thead>
<tr>
<th>Learning Time</th>
<th>Immediate feedback</th>
<th>Delayed feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate feedback</td>
<td>Providing feedback at 3 level</td>
<td>Providing feedback at 13 level</td>
</tr>
<tr>
<td>Self-paced</td>
<td>Use learning time on their own.</td>
<td>Learning time is limited as 1.5 sec. per stage.</td>
</tr>
<tr>
<td>Forced</td>
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</tr>
<tr>
<td>Delayed feedback</td>
<td>Learning time in self-paced condition</td>
<td></td>
</tr>
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<td>Self-paced</td>
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| Delayed feedback | Learning time in self-paced condition |
| Self-paced | Learning time is limited as 1.5 sec. per stage. | Learning time in self-paced condition |
| Forced | Learning time in self-paced condition |

Experimental design & procedure

Timing of feedback & Autonomy (2 X 2 between-subject design)

1) Immediate feedback: Providing feedback at 3 level
2) Delayed feedback: Providing feedback at 13 level
3) Immediate feedback: Providing feedback at 3 level
4) Delayed feedback: Providing feedback at 13 level
5) Immediate feedback: Providing feedback at 3 level
6) Delayed feedback: Providing feedback at 13 level
7) Immediate feedback: Providing feedback at 3 level
8) Delayed feedback: Providing feedback at 13 level

Answer accuracy
- Immediate feedback conditions in short-term test: Participants typed the answer very quickly but their accuracy was relatively low.
- From the beginning of the learning phase to the last stage, they have been given continuous feedback.
- Because of overconfidence which caused by repeated exposure, they misunderstand that they could get the right answer.
- Immediate feedback conditions in long-term test: Participants typed the answer quickly but their accuracy is increased.
- From a long-term perspectives, immediate feedback appears to get advantages in perceptual learning.
- Those who received immediate feedback in self-paced conditions, they use more learning time to complete before receiving feedback until 2nd stage.
- After 3rd stage, participants who received delayed feedback use more time in learning sessions.
- Because the answer is provided continuously during the learning session, participants created the illusion that they know the answer very well.
- Overconfidence that caused by repeated exposure is questioned. To make sure that this results in more certain, we will change the immediate feedback appear only once on each picture.
- Furthermore, there is a need to see if there is any difference between the actual discrepancies in JOL.

Results
- Responded level: The main effect of timing of feedback in short-term test (F(1, 4) = 28.983, p < .001)
- People who received immediate feedback performed significantly better than people who received delayed feedback. (MeanImmediate = 5.892, MeanDelayed = 7.510)
- The main effect of timing of feedback in long-term test (F(1, 4) = 14.202, p < .001)
- People who received immediate feedback performed significantly better than people who received delayed feedback. (MeanImmediate = 5.898, MeanDelayed = 7.096)
- Answer accuracy: The main effect of timing of feedback in short-term test (F(1, 4) = 15.343, p < .001)
- People who received delayed feedback condition is more higher than immediate feedback condition. (MeanImmediate = 60.937, MeanDelayed = 86.824)
- No difference in long-term test
- Learning time in self-paced condition
- Learning time is significantly different between immediate feedback and delayed feedback (MeanImmediate = 730.340, MeanDelayed = 952.830, F(1, 4) = 0.034, p > .05)

R e f e r e n c e s