Gathering information about one's own abilities

MAKI WADA*2,3

Department of Psychology, College of Humanities and Sciences, Nihon University, Setagaya-ku, Tokyo 156

This study investigated information gathering behavior about one's own abilities. Fifty-five female undergraduates participated in Experiment 1 and the following three hypotheses were examined: (1) both self-enhancement and self-confirmation model predicted that those who were confident in the high level of ability would select information about the high ability level; (2) self-enhancement model predicted that those who were confident in the low level of ability would avoid information about the low ability level while (3) self-confirmation model predicted that those who were confident in the low level of ability would approach information about the low ability level. The result provided some support to the first hypothesis. The second hypothesis was rejected and the third hypothesis was supported. Experiment 2 tested whether or not the ability evaluation would be accepted if the ability evaluation induced a negative impact on the self. The result from seventy male undergraduates showed that those who were at the low level of ability as well as the high and intermediate did not discredit the validity of their evaluation and would likely to accept their ability evaluation. These results were discussed in terms of the self-relevant information gathering behavior.

Key words: information gathering behavior, ability evaluations, uncertainty reduction, self-esteem, self-conceptions.

People cope with the environment by gathering various kinds of information. Among them, self-relevant information, i.e. information concerning one's self has particular implication for the responses to the environment. Recently the researches on the cognitive and behavioral aspects of gathering self-relevant information have been accumulated. Especially a topic which gained much interest is a search for information about one's own ability level. Weiner (1979, 1986) argued that the causal attributions of performance outcomes to internal factors such as ability and effort produce large changes of probabilities of success and failure, while the causal attributions to the external factors such as luck and task difficulties produce small changes of these probabilities. It is assumed that people can infer their levels of ability after attributing success or failure of a task performance to internal factors. Weiner suggested that information search concerning one's level of ability can occur through one's cognitive activities of causal attributions in achievement situations. However, Weiner did not indicate specific ways of gathering information or information gathering strategies.

Achievement motivation researchers implicitly assumed that people tend to gather information favorable to their self-esteem (Atkinson, 1957; Atkinson & Raynor, 1974). In Atkinson's theory (1957), for example, it is suggested that success produces positive self-esteem while failure produces negative self-esteem.
Achievement behavior is supposed to maximize positive self-esteem and minimize negative self-esteem. The Atkinson's theory, therefore, is referred to as self-enhancement model of achievement behavior. The model implies that people are likely to select self-enhancing information from available pieces of information.

Swann (1983) proposed self-confirmation model of information gathering behavior. He hypothesized that people prefer the phenomena that are predictable and consistent with their expectations, and that people are motivated to assure their self conceptions which play an important role in predicting and controlling the environment. He found that the subjects preferred the feedbacks that verified, validated and sustained their self conceptions, to the feedbacks that disconfirmed them (Swann & Reed, 1981a, 1981b). This tendency was interpreted as representing subject's active efforts to acquire the self-confirmatory feedbacks (Swann & Snyder, 1980) and also suggested that such an information gathering behavior would occur in achievement situations.

With regard to the information gathering behavior one issue arose: When and what kind of information gathering behavior occurs? Trope (1983, 1986) presented self-assessment model of the achievement behavior as an alternatives to self-enhancement model. He maintained that the person's initial beliefs about his ability can be represented by the subjective probability distributions over given ability dimensions. With success or failure people can revise the prior probability distributions. The amount of the upward or downward revision after success or failure is defined as a diagnosticity of task in the ability evaluation. The more revised are the probability distributions, the more capable is the task to diagnose the ability levels of individuals. Trope assumed that people engage in activities that reduce uncertainty in the ability level by means of acquiring information of high diagnosticity for their ability evaluation. From his self-assessment model, it is implied that when uncertainty of one's belief has significantly reduced, the information gathering behavior will stop. In other words, the scope of self-assessment model, presumably, is limited to the situation in which uncertainty of a particular belief is large.

According to Swann and Giuliano (1987), while one's belief is not enough certain, various kinds of information gathering behavior persists; after significant reduction of uncertainty of one's belief, only the confirmatory information search remains. However different models make different predictions what kind of information gathering behavior would occur when one's belief is ceratin? Thus this study focuses on the information gathering behavior in the situations where one's belief is certain.

Self-enhancement model predicts that if a certain belief in ability is formed by success or failure, the success or failure would asymmetrically influence the subsequent behavior—i.e., success would raise positive self-esteem to the extent of having implications of a high ability level while failure would induce negative self-esteem to the extent of having implications of a low ability level. Since additional information search is expected to confirm the positive self conceptions and to enhance the positive self-esteem, it is predicted from the self-enhancement models that the person who is confident in possessing a high ability level will engage in gathering information of a high ability level. This is the same prediction which would be drawn from self-confirmation model.

On the contrary, self-enhancement model and self-confirmation model make the different predictions on the information gathering behavior of the person who is confident in possessing a low ability level. The self-enhancement model implies that
the negative self conceptions—i.e., belief in possessing a low level of ability—will lessen the subject’s positive self-esteem and motivate him or her to compensate for the lowered self-esteem by trying to enhance the positive self conceptions. It is thus predicted that people who are confident in the low ability level would avoid information about their low level of ability, because such information search would not produce the negative self-esteem. The self-confirmation model, on the other hand, suggests that people who have the negative self conceptions would prefer the negative information for the self conceptions, because such information is expected and verifies their negative self conceptions. It is predicted, therefore, that people who are confident in their low level of ability would prefer information that assures them an expected low level of ability.

Now, Frey (1981) and Frey and Stahlberg (1986) offered that there might be alternative ways to avoid self threatening if one was given negative information to the self: One is the modification of the self concept to be more negative through accepting the negative information, and the other discrediting the information. So, if the feedback of one’s level of ability induces a negative impact on the self, either the doubt for the validity of the feedback or the acceptance of the information will occur. If the individuals are successful in discrediting the validity of the ability evaluation, they will be able to sustain their positive self-esteem. If they accept the ability evaluation and reconstruct their self concepts, they will no longer annoyed by the conflict between positive self concepts and the negative information. Thus, the purpose in Experiment 1 was to investigate the information gathering behavior which occurs when a person is confident of his or her ability level. And the purpose in Experiment 2 was to test whether those who were evaluated their ability level as low would discredit the validity of the ability evaluation or would accept the ability evaluation of the low ability level.

Experiment 1

Experiment 1 was conducted to test the following three hypotheses: (1) it is predicted by both self-enhancement and self-confirmation models that confidence in evaluating one’s ability as high would make him or her more likely to select information about a high ability level; (2) it is predicted by self-enhancement model that confidence in evaluating one’s ability as low make him or her less likely to select information about a low ability level; (3) it is predicted by self-confirmation model that confidence in evaluating one’s ability as low make him or her more likely to select information about a low ability level.

Method

Subjects. Fifty-five female undergraduates of Nihon University were randomly assigned to one of three experimental conditions under which the subjects were informed of belonging to either the high, intermediate, or low level of a certain important ability.

Task. An original anagram task, which actually did not demand a special ability to perform, was used as a fake ability test. The task was to find a key word which consisted of meaningless five alphabets such as ‘KFLQH’ out of 40×50 random alphabet matrix within given time limits. Thirty-two identical syllables (key word) were so embedded in the matrixes not to find out at one glance where and how many they existed.

Procedure. All fifty-five subjects participated together in this experiment in a classroom setting. The experimenter was the author of this paper.

1. The ostensible explanation of the experiment given to the subjects involved
that the experiment was designed to survey information integration ability by 'Information Integration Ability Test', which in fact was the original anagram task, and that this ability was divided into three ability levels: (a) low, (b) intermediate, and (c) high level. In order to minimize the differences among subjects in initial beliefs about their ability, the subjects were informed that people could be classified into one of three ability levels regardless of age, sex, and career and that the ability could not be measured adequately by standard intelligence tests or achievement tests.

2. All subjects were told to rate the importance of ability from extremely important (+3) to extremely unimportant (−3).

3. And subjects rated the chances of having each of the three ability levels on the three 11-point scales (ranging from 0% to 100%). The sum of each probability estimation on the three scales was 100%. These estimations were interpreted as the prior belief of their ability.

4. Subjects rated their needs for information search about each three 'Information Integration Ability' levels from extremely necessary (+3) to extremely not necessary (−3).

5. Subjects performed the 'Information Integration Ability Test', within 10 minutes. The key word was 'KFLQH'. After the performance the experimenter informed that she would score the test during the lecture (Social Psychology) and that each subject's ability level as a result of this test would be fed back individually after the lecture.

6. After the lecture, individually each subject's ability level was randomly fed back, resulting that the high ability level group consisted of 16 subjects, the intermediate ability level group of 19, and the low ability level group of 20.

7. Next, subjects were required to rate the chances of having each of the three ability levels on the same 11-point prob-

ability scale as before performance.

8. Subjects rated the needs for information search about each three 'Information Integration Ability' levels on the same scale as before performance.

9. Then, subjects were asked to rate their needs of one's own individual score of the ability from the need to know (+1), the undecisional (+2), need not to know (+3).

10. Finally subjects were informed of the true purpose of this experiment.

Main dependent variables were differences in need for information search between before performance and after performance feedback as a function of one's ability level, and differences in need for information search among the kinds of ability information as a function of one's ability level. The importance of ability and the need for one's score of ability test were rated as a supplementary measurement.

Results

Manipulations. First of all, uncertainty values of the prior belief of subject's ability estimation were computed by uncertainty indices: \( U = -\Sigma P_i \log_2 P_i \), where \( U \) stands for uncertainty values and \( P_i \) for subject's estimated probabilities of each ability level. The uncertainty values of the prior belief were analysed by one way analysis of variance (high, intermediate and low ability level). There was no significant main effect \( F(2,52)=0.63 \). Then, the expected values of their ability evaluation were calculated from the subject's probability ratings on the scales by assigning 1, 2 and 3 to the low, intermediate and high ability level, respectively, and summing up these values each weighed by its subjective probabilities. The expected values were subjected to one way analysis of variance, which also revealed no significant main effect \( F(2,52)=1.67 \). These results showed that either of the uncertainty values and the expected values of their ability in
their prior belief did not vary among the three experimental conditions. The mean of the expected values was 1.88, which indicated that the expected values in the prior belief belonged to the intermediate ability level.

Next, the reduction of uncertainty of the ability evaluation between before the task performance and after feedback on performance in each ability condition were submitted to t test. Significant uncertainty reduction in low and intermediate ability level \((t=3.63, p<.01; t=2.45, p<.05\text{, respectively})\) were found but, in high ability level uncertainty reduction did not reach a significant level \((t=0.91)\). Then the expected values after feedback of performance were analysed by one way analysis of variance for the three ability levels. The results revealed a significant main effect \((F(2,52)=26.55, p<.001)\). The mean of the expected values was 1.50 in low ability level, 2.03 in intermediate ability level and 2.26 in high ability level. The differences of the means of the expected values among the three ability levels were shown to be significant by the subordinate analysis. Thus, in both the low and intermediate ability experimental condition subjects estimated their ability level according to the feedback and reduced uncertainty of the ability evaluation. However, the subjects in the high ability level evaluated their ability according to the feedback though uncertainty of their ability evaluation was not significantly reduced. Thus the manipulations for the estimation of one's ability and its confidence were succeeded in both the low and intermediate ability experimental conditions while was failed in the high ability experimental condition.

Performance. Performance on 'Information Integration Ability Test', the number of the key word correctly formed, was subjected to one way analysis of variance for the three ability levels. The result revealed no significant main effect \((F(2,52)=0.16)\), showing that performance did not vary among the three experimental conditions. The mean number the correctly formed key words was 18.39 across the experimental conditions.

Importance of ability. Importance of 'Information Integration' ability rated on the 7-point scale was analysed by one way analysis of variance, yielding no significant main effect among three ability levels \((F(2,52)=1.32)\). Importance of ability in the prior belief did not differ significantly among the three experimental conditions. The mean of importance was 1.88, which indicated that the ability was important for the subjects.

Needs for information search. Table 1 indicates (1) needs for information search before performance and after performance feedback, (2) differences in needs for information search between before performance and after performance feedback and (3) differences in needs for information search among three kinds of information after performance feedback. First, in every kind of information, that is, each information about low, intermediate and high ability level needs for information search before performance were analysed by one way analysis of variance for the three ability levels. In either case no main significant effects were found \((F(2,52)=0.21)\) in information about low ability level, \(F(2,52)=0.04\) in information about intermediate ability level and \(F(2,52)=0.59\) in information about high ability level, respectively). As Table 1-1 shows, before performance the means of needs for information search were around 1.30. Before performance needs for information search were not biased and inferred to reveal the approach to every kind of information. Next, shown in Table 1-2, the differences in needs for information search between before performance and after performance feedback, i.e. the subtraction of needs for information search before performance from after performance feedback, were submit-
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Table 1-1
Need for information search

<table>
<thead>
<tr>
<th>Manipulated ability levels</th>
<th>Low</th>
<th>Intermediate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>information about low ability level</td>
<td>1.10 (1.68)</td>
<td>1.10 (1.32)</td>
<td>1.37 (1.08)</td>
</tr>
<tr>
<td>information about intermediate ability level</td>
<td>1.20 (1.43)</td>
<td>1.21 (1.18)</td>
<td>1.51 (1.01)</td>
</tr>
<tr>
<td>information about high ability level</td>
<td>1.70 (1.30)</td>
<td>1.57 (1.12)</td>
<td>1.31 (1.01)</td>
</tr>
<tr>
<td>After performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>information about low ability level</td>
<td>2.10 (0.91)</td>
<td>0.36 (1.46)</td>
<td>1.06 (1.65)</td>
</tr>
<tr>
<td>information about intermediate ability level</td>
<td>1.30 (1.26)</td>
<td>1.73 (1.24)</td>
<td>1.12 (1.14)</td>
</tr>
<tr>
<td>information about high ability level</td>
<td>1.80 (1.23)</td>
<td>1.42 (1.07)</td>
<td>2.25 (1.06)</td>
</tr>
</tbody>
</table>

Notes: SDs are in parentheses.

Table 1-2
Differences in need for information search between before performance and after performance feedback

<table>
<thead>
<tr>
<th>Manipulated ability levels</th>
<th>Low</th>
<th>Intermediate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>information about low ability level</td>
<td>1.00 (1.45)**</td>
<td>-0.73 (0.99)**</td>
<td>-0.51 (0.94)</td>
</tr>
<tr>
<td>information about intermediate ability level</td>
<td>0.10 (0.85)</td>
<td>0.52 (1.17)†</td>
<td>-0.18 (0.75)</td>
</tr>
<tr>
<td>information about high ability level</td>
<td>0.10 (1.11)</td>
<td>-0.15 (0.68)</td>
<td>0.25 (0.05)</td>
</tr>
</tbody>
</table>

Notes: SDs are in parentheses. ** p<.01, * p<.05, † p<.10.

Gathered to t test in every ability level condition. The results showed that the subjects in the low ability level condition revealed to have more needs for information search about low ability level (t=3.08, p<.01), whereas the intermediate ability level condition revealed to have less needs for information search about low ability level (t=3.24, p<.01) and tended to have more needs for information search about the intermediate ability level (t=1.96, p<.10). But for the high ability level condition, no significant differences of needs for information search about any kind of information between before performance and after performance feedback were revealed.

Shown in Table 1-3, after performance feedback the differences in needs for information search among three ability levels were submitted to t test. The results showed that the subjects in the low ability level condition needed significantly more information about the low ability level than about the intermediate level (t=3.39, p<.01) and tended to need more information about the high ability level than about the intermediate ability level (t=1.81, p<.10). The subjects in the intermediate ability level condition needed significantly more information about the intermediate and high ability levels than about the low ability level (t=4.31, p<.001 and t=3.75, p<.01, respectively). The subjects in the high ability level condition needed significantly more information search about high ability level than about the intermediate and the low ability
Table 1-3
Differences in need for information search among three kinds of information after performance feedback

<table>
<thead>
<tr>
<th>Manipulated ability levels</th>
<th>Low</th>
<th>Intermediate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>differences between low and intermediate</td>
<td>0.80 (1.05)**</td>
<td>-1.36 (1.38)**</td>
<td>-0.06 (1.34)</td>
</tr>
<tr>
<td>differences between low and high</td>
<td>0.30 (0.86)</td>
<td>-1.05 (1.22)**</td>
<td>-1.18 (1.68)*</td>
</tr>
<tr>
<td>differences between intermediate and high</td>
<td>-0.50 (1.23)†</td>
<td>0.31 (1.29)</td>
<td>-1.12 (1.20)**</td>
</tr>
</tbody>
</table>

Notes: SDs are in parentheses. ** p<.01, * p<.05, † p<.10. Positive (or negative) values indicate that the ratings were greater (or smaller) on the low ability level than on the intermediate (1st row in the table) or on the high (2nd row), and were greater (or smaller) on the intermediate than on the high (3rd row).

Table 2
Number of subjects needing or not needing to know test score in each condition

<table>
<thead>
<tr>
<th>Manipulated ability levels</th>
<th>Low</th>
<th>Intermediate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>need to know</td>
<td>15</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>not decided</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>do not need to know</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

levels (t=3.74, p<.01 and t=1.68, p<.05, respectively). These results provided some support to the first hypothesis that confidence in the ability evaluation as high would make subjects to choose more information about the high ability level than the other ability levels, although the unsatisfactory effectiveness of the manipulations yielded some doubts to this conclusion. However, the results that the subjects with confidence in the ability evaluation as low would search for more information about the low ability level and approach the information about the low ability level more than the other ability levels supported the third hypothesis and rejected the second hypothesis.

Needs for test score. Finally we should add to needs for score of the ability test. The needs for test score were submitted to log linear analysis for the three ability levels by ranks of needs estimations. As clearly shown in Table 2 needs for test score were significantly high regardless of three ability levels ($\chi^2=12.92, df=2, p<.01$).

Discussion
Under uncertainty of belief of ability the subjects were eager to gather information unrelated to the ability levels whereas after significant reduction of uncertainty in one’s ability evaluation the subjects wanted to obtain information on the level of ability into which they were classified. These results showed that after reduction in uncertainty of the ability evaluation information search was directed to confirm the confident belief of one’s ability, even if the person belonged to the low level of the ability. Information search concerning one’s level of the important ability after uncertainty reduction could make him or her understand better about his or her level of the ability. This information search especially on the low level of the ability, however, could yield the threat to the self-esteem of the person whose ability level belonged to the low level of the ability. Therefore, it is concluded that the subjects’ information gathering behavior after uncertainty reduction in their ability evaluation was in conflict with the self-enhancement model, but in agreement with the self-confirmatory model.
Experiment 2

Experiment 2 tested whether the ability evaluation would be accepted or not if the ability evaluation induced a negative impact on the self. According to Frey (1981) and Frey and Stahlberg (1986) if a person is classified into the low level of the ability, he or she would have alternative ways of avoiding the threat for the self-esteem: One is to discredit the ability evaluation and the other is to accept the low level of the ability evaluation. The former may save his or her positive self-esteem and such behavior agrees with the self-enhancement model of information gathering behavior. The latter, though produce the threat for the positive self-esteem, would sustain the low level of the ability evaluation. On the other hand, since the high level of the ability evaluation does not at least induce the negative self-esteem, it is predicted that the person who is classified into the high ability level would accept the ability evaluation, but would not doubt the ability evaluation.

Method

Subjects. One hundred and six male undergraduates (Nippon Electronics College) participated this experiment as subjects. Seventy subjects who completed the whole procedure were submitted to the following analysis. The subjects participated all together in the experiment during the lecture time of mathematics. For all of them mathematics was a required curriculum.

Procedure. The experiment was conducted in a classroom setting when the scores on the midterm examination of mathematics were feedback to the students. The experimenter was the author of this paper.

1. Before the score was feedback, the ostensible explanation was given to the subjects that this survey was designed to examine the validity of method of evaluating students' achievement in mathematics. Then all subjects rated importance of mathematical ability from extremely important (+5) to extremely unimportant (+1).

2. All subjects were informed that based on their scores on the midterm exam of mathematics they were divided into the three ranks: (a) low, (b) intermediate and (c) high rank. Next they were instructed that the score on the midterm exam weighed heavily in the current evaluation method of mathematics and would significantly influence their final grades in mathematics. Then Subjects rated the chances of being classified into the three ranks on the three 11-point scales ranging from 0% to 100%, the same one as used in Experiment 1. Sum of the probabilities on the three scales was 100%. These probability ratings were interpreted as the prior estimation of mathematical ability.

3. Subjects rated their needs for information on the features of people who were categorized in each three ranks, on a scale ranging from extremely necessary (+5) to extremely unnecessary (+1).

4. Each subject was individually feedback the score of the midterm exam. Then the experimenter informed that if the score was less than 70, then the rank was the low, if more than 70 and less than 90, then the rank the intermediate, and more than 90, then the rank the high. The experimenter asked the subjects to identify their own ranks according to the criteria and to rate the chances of being classified into the three ranks on the same 11-point scales as used in Experiment 1.

5. Then they again rated needs for information about the features of people with the low, intermediate and high mathematical ability on a scale ranging from extremely necessary (+5) to extremely unnecessary (+1).

6. Subjects were instructed that there existed a variety of evaluation methods
and that this time scores on the midterm exam were utilized as criteria for the evaluation of the achievement in mathematics. Then subjects read an argument to support the evaluation method using midterm exam scores and a counterargument to discredit the method. Next, the students were asked to declare for or against the criteria.

7. Finally subjects were told the true purpose of this survey.

Main dependent variable in Experiment 2 was the support or unsupport for the validity of the criteria including the test score by which the students were classified into one of the three mathematical ranks.

Results

Scores of mathematics exam. First, the high rank group consisted of 21 subjects, the intermediate of 28 and the low of 21 according to their scores of mathematics exam. The average of the test scores of each rank group was 95.14 in high rank group, 82.07 in intermediate group, 60.38 in low rank group.

Manipulations. Uncertainty values of the prior belief of subject's evaluation of mathematics were computed by uncertainty indices as the same as Experiment 1. The uncertainty values in the prior evaluation were analysed by one way analysis of variance including three ranks of the test. The results did not show the significant main effect ($F(2,67)=2.39$, $p<.10$). The low rank group tended to be more certain of their ranking of mathematics than the high rank group. Then uncertainty reducing of the estimations between the prior evaluation and after the evaluation in each group were subjected to $t$ test. Significant uncertainty reducing in each three rank groups was found ($t=4.24$, $p<.001$ in the high rank group; $t=4.98$, $p<.001$ in the intermediate rank group; $t=4.08$, $p<.001$ in the low rank group, respectively). Uncertainty reducing of the evaluation of mathematics in each group was occurred.

The expected values of the evaluation of the mathematics were calculated as the same as Experiment 1 from the subject's probability ratings on the scales by assigning 1, 2 and 3 to the high, intermediate and low rank, respectively, and summing up these values each weighed by its subjective probabilities. The expected values in the prior evaluation were analysed by one way analysis of variance including three ranks, revealing the significant main effect ($F(2,67)=11.57$, $p<.0001$). The expected values were 1.83 in the high rank group, 2.18 in the intermediate rank group, and 2.52 in the low rank group. Next, the expected values after the evaluation in each rank group were analysed by one way analysis of variance. The results showed the significant main effect ($F(2,67)=90.21$, $p<.0001$). The expected value was 1.40 in the high rank group, 2.01 in the intermediate, and 2.81 in the low. From these results subjects accurately evaluated their ranks according to the criteria of the test score though in their prior belief they had the slight biased estimation of mathematics.

Importance of the mathematics. Importance of the mathematics for them was analysed one way analysis of variance including the three rank groups, revealing no significant main effect ($F(2,67)=0.38$). The average was 3.64. They all rated mathematics and the ability of the mathematics important.

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Table 4

<table>
<thead>
<tr>
<th></th>
<th>Mathematical ranks</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>Intermediate</td>
<td>High</td>
</tr>
<tr>
<td>In the prior evaluation</td>
<td>information about low rank</td>
<td>3.80 (0.92)</td>
<td>3.25 (1.26)</td>
<td>2.90 (1.44)</td>
</tr>
<tr>
<td></td>
<td>information about intermediate rank</td>
<td>3.52 (0.92)</td>
<td>3.14 (1.07)</td>
<td>3.00 (1.41)</td>
</tr>
<tr>
<td></td>
<td>information about high rank</td>
<td>3.28 (0.90)</td>
<td>3.28 (1.15)</td>
<td>3.19 (1.47)</td>
</tr>
<tr>
<td>After the evaluation</td>
<td></td>
<td>Low</td>
<td>Intermediate</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>information about low rank</td>
<td>3.71 (0.90)</td>
<td>3.17 (1.09)</td>
<td>2.90 (1.41)</td>
</tr>
<tr>
<td></td>
<td>information about intermediate rank</td>
<td>3.33 (0.96)</td>
<td>3.07 (1.15)</td>
<td>2.80 (1.36)</td>
</tr>
<tr>
<td></td>
<td>information about high rank</td>
<td>3.28 (0.95)</td>
<td>3.25 (0.96)</td>
<td>3.00 (1.41)</td>
</tr>
</tbody>
</table>

Notes: SDs are in parentheses.

the criteria inclusive of the test score was analysed by the log linear analysis concerning to the three ranks of the test score. The results showed the significant main effect of the support or unsupport for validity of the criteria ($\chi^2=13.32$, $df=2$, $p<.05$). As shown in Table 3, the three rank groups reveal neither support nor unsupport for the validity of the criteria by which subjects were classified into one of the three rank groups in mathematics.

Needs for information search. Table 4 showed needs for information search in the prior evaluation and after the evaluation. In every kind of information, that is, each information about low, intermediate and high mathematical rank needs for information search in the prior evaluation were analysed by one way analysis of variance for the three mathematical ranks. In either case there was no significant main effect ($F(2,67)=.05$ in information about high rank, $F(2,67)=1.18$ about intermediate rank, and $F(2,67)=2.88$ about low rank, respectively). The needs for information search in every kind of information after the evaluation were subjected to one way analysis of variance for the mathematical ranks, revealing no significant main effect ($F(2,67)=.42$ in information about high rank, $F(2,67)=1.05$ about intermediate rank, $F(2,67)=2.72$ about low rank, respectively). However both in the prior evaluation and after the evaluation the low rank group tended to need information about low rank more than the high rank group. This tendency of information search agreed with the findings in Experiment 1.

Discussion

In Experiment 2, which was carried out in the educational setting, the results showed that the subjects did not discredit the validity of the evaluation of mathematical rank, unrelated to which of the three ranks they were classified into. The students, who were evaluated to be at the low rank of mathematics, were as undoubtful to the evaluation as those who were at the intermediate or at the high rank, even though the lack of the doubt could result in the decrement of the positive self-esteem for the subjects of the low rank. In Experiment 1, even though the subjects were classified into the low ability level, they sought more information concerning their ability level. In Experiment 2, though the clear differences in the information search among the mathematical ranks were not found, the evaluation of the mathematics was accepted
even if such acceptance would induce the negative impact on the self. According to the findings of Experiment 1 and Experiment 2, the person, who is informed of being classified into the specific level of an important ability and is confident of being at the level is likely to seek information about the informed level of the ability and to accept it.

General Discussion

There have been few studies directly dealing with when and what kind of information people would gather. The present study clearly revealed that the information search about one’s ability evaluation was not always constant but changeable according to uncertainty reduction in the evaluation. As shown in Experiment 1, subjects, who was not certain in their own ability levels gathered information about every level of the ability, probably because their uncertainty in the ability evaluation made them eager to ask as much information as possible. On the other hand, after performance feedback by which the uncertainty in the ability evaluation was reduced and their ability levels were clarified, subjects tended to approach the information about their own ability level. The evaluation of high level of the important ability might enhance the positive self-esteem while the evaluation of the low ability level might arouse the negative self-esteem. Searching for more information about the low ability level might lead the subjects who were confident in the low level of the ability to verify the low ability belief and strengthen the negative self-esteem, which supported the prediction by self-confirmation model but rejected the prediction by self-enhancement model. Moreover, as shown in Experiment 2, once one’s ability level was feedback, the validity of the feedback evaluation was not challenged, i.e. the feedback was accepted regardless of the ability levels. The findings were contradictory to Frey’s conclusion (1981: Frey & Stahlberg, 1986) that the persons who were given negative feedbacks on their self-esteem discredit the validity of the feedbacks. Both the positive and negative information to the self concepts were not denied even if the validity of the information was doubtful.

The confident evaluation of the low ability level led the subjects to gather information about the evaluation of the low ability, although it would foster the verification of the negative self-concept, indicating that they did not discredit but accept the feedback on the ability level. The ability evaluation yields the knowledge of both one’s capabilities and inabilities. Knowing what and to what degree one can do or not is important and necessary to control one’s behavior. Markus and Wurf (1987) proposed that self conceptions intermediates between self knowledge and one’s action. Thus, the confidence in the evaluation of the low ability level and the confirmation of the low ability belief might not threaten the self in terms that knowing not to be able to execute one’s particular behavior is useful for coping with the environment.

Throughout this study one specific tendency of information gathering behavior about one’s own abilities was found: The person who was classified into the low level of ability would search for the information about the low level of ability and be likely to accept the information. This tendency in information gathering behavior might also significantly influence the interaction to the others (Takata, 1987). Future research will be needed in terms of self system representing self conceptions and one’s behavior, and the interaction to the others beyond self system. In that point of view information gathering strategies will be again focused on.

References

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