

# Four types of group discussion by Japanese undergraduates

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## 1. Introduction

Recently, group discussion for problem-solving and decision-making plays more and more important roles in our social life, from everyday meetings at work places to public involvement in the domain of public enterprises, the citizen jury system in courts, and consensus conferences in the field of science communication. Particularly in those public situations, participants often have different background and expertise. Our research project aims to propose a classroom program with which undergraduates can acquire discussion abilities through group discussion. To achieve the aim, it is necessary to identify discussion patterns of undergraduates and establish measurements for evaluating the discussion. However, it is still unclear what counts as a good discussion. Our previous works [Suzuki, et al forthcoming] showed a measurement for evaluating the process of group discussion and identified some of the features of the discussion itself that contribute to the formation of the impressions or evaluations. The measurement, however, was extracted from the Focus Group Interview data, whose style does not seem the same as group decision making. The purpose of this paper is to establish a measurement for group decision making and identify features of the group discussion by Japanese undergraduates by using the same method of Suzuki et al (ibid.)

## 2. Data

We obtained twenty-seven discussion sessions by nine groups; that is, each group had three sessions. Each group consisted of six people, three males and three females. Half of them were the students in the information science and technology majors, and the rest were those who majored in humanity such as law, literature and economics. We instructed them to make a group decision concerning three problems of information technology.

While six groups had a professional moderator to navigate their discussion at either the first or the second session, the other three carry out their discussion by themselves throughout all the sessions. In this paper, we analyzed twelve sessions, three from the former six groups and nine from the latter, that were conducted without a moderator.

## 3. Evaluation of the Discussion Scenes

In our previous work [Suzuki et al., 2007], we illustrated the relationships between impressions people have toward certain scenes of group interviews and interaction of the interviewers by means of impression rating, factor analysis and interaction analysis. In the present study, we employ the same methods. As the first step, we conducted impression rating experiments with the undergraduates who also participated in the discussion.

### Impression Rating & Factor Analysis

As the stimulus for the impression rating, we use eight minutes long video clips of the scenes taken from the discussion data. The subjects were all the participants of the discussion sessions who were required individually to evaluate three clips which did not involve themselves with the 21 terms of antonyms of adjectives. Table 1 shows the rotated factor matrix obtained from the impression rating data. We determined five factor constructs, “activeness”, “multidirection and unification of the discussion”, “relationships of the participants”, “development and sophistication of the discussion” and “sincerity of the participants”.

**Table 1: pattern matrix (rotated)**

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Evaluation terms	Activeness	Multidirection & unification	Relationships	Development & Sophistication	Sincerity
bright-dark	<b>1.049</b>	-0.068	0.075	-0.177	-0.088
busy-quiet	<b>1.017</b>	-0.080	-0.051	-0.185	0.002
friendly-reserved	<b>0.904</b>	-0.032	-0.079	0.038	-0.012
active-passive	<b>0.816</b>	0.068	-0.022	0.039	-0.030
participating-observing	<b>0.632</b>	0.066	0.088	0.080	-0.049
dynamic-static	<b>0.621</b>	0.153	-0.139	-0.036	0.013
natural-unnatural	<b>0.596</b>	0.003	-0.094	0.248	0.186
open-closed	<b>0.538</b>	-0.059	-0.043	0.190	0.233
steady-disturbed	<b>0.457</b>	0.078	0.136	0.329	-0.092
calm-desperate	<b>0.425</b>	-0.083	0.093	0.127	0.301
wide-scoped-blinkered	-0.028	<b>0.723</b>	-0.090	0.090	-0.027
serious-flippant	-0.088	<b>0.671</b>	-0.031	-0.177	<b>0.391</b>
careful-cursory	-0.110	<b>0.609</b>	0.118	0.174	-0.044
neutral-biased	-0.029	<b>0.587</b>	0.202	-0.232	0.032
concise-wordy	0.221	<b>0.582</b>	0.196	0.080	-0.198
multilateral-unilateral	0.140	<b>0.562</b>	-0.335	0.162	-0.097
sympathetic-antipathetic	0.094	0.029	<b>0.627</b>	-0.065	0.087
uniform-diverse	-0.060	-0.122	<b>0.575</b>	0.043	-0.070
shared-unshared	0.175	0.020	<b>0.525</b>	0.055	-0.010
consistent-inconsistent	0.036	0.095	<b>0.479</b>	0.031	0.130
linear-winding	-0.162	-0.010	<b>0.461</b>	0.084	0.003
collaborative-self-centered	0.042	0.046	<b>0.403</b>	0.065	0.235
equal-unequal	0.201	0.024	0.215	0.018	0.053
serial-single	0.284	-0.128	0.103	<b>0.604</b>	-0.150
developing-digressive	-0.026	0.113	0.209	<b>0.573</b>	-0.094
investigated-shallow	-0.048	0.271	-0.097	<b>0.534</b>	0.061
detailed-rough	-0.035	<b>0.344</b>	0.009	<b>0.514</b>	0.027
orderly-disconnected	-0.080	0.087	<b>0.401</b>	<b>0.489</b>	-0.036
depthful-superficial	0.142	0.199	-0.136	<b>0.349</b>	0.180
sincere-insincere	0.083	0.055	0.056	-0.085	<b>0.686</b>
thorough-compromising	0.131	-0.021	0.061	0.089	0.108
Variance explained	5.777	2.704	2.194	2.094	1.044
Proportion	18.6%	8.7%	7.1%	6.8%	3.4%

Table 2 indicates the mean factor score, either positive or negative, of the evaluated sessions.

**Table 2: Factor mean scores of the clips**

session ID	Factor 1 Activeness	Factor 2 Multidirection & unification	Factor 3 Relationships	Factor 4 Development & sophistication	Factor 5 Sincerity
#0-1-1	+	+	+	+	+
#0-1-2	+	+	+	+	+
#0-1-3	+	+	+	+	+
#0-2-1	-	-	-	-	-
#0-2-2	-	-	-	-	-
#0-2-3	-	-	-	-	-
#0-3-1	+	-	+	+	+
#0-3-2	+	-	+	+	-
#0-3-3	+	-	-	-	-
#2-1-1	-	+	-	-	-
#2-2-1	-	-	-	-	-
#2-3-1	-	-	+	-	-

What is to be considered is that the three scenes taken from the discussions conducted by the same group, that is, 0-3-1, 0-3-2, and 0-3-3, received different evaluations. That means that these differences cannot be explained by the character or the personality of participants. We instead look for a possible explanation of the difference in the interactional features of the discussion in each scene.

#### 4. Discussion Types of Japanese Undergraduates

By analyzing the interaction of each scene, we find that the twelve sessions can be categorized into four types.

**Type 1: Leadership** In this type, a specific participant behaves as a moderator or a leader. S/he responds immediately to other participant's remark and navigates the discussion by prompting participants to utter their remarks, making the point of discussion clear, summarizing opinions, and making the discussion go forward. #0-1-1, #0-1-2, #0-1-3, #2-1-1 can be included into this type. This type evaluated positively in all factors (for example, #0-1-1, #0-1-2, #0-1-3). However, this type has also demerits in which other participants tend to depend on the moderator.

**Type 2: Group Interview** In this type, participants behave as if they are engaged in group interview. They just put their own opinions without regard to others'. Although the most of the factors tend to be evaluated negatively, in 2-1-1, a participant who behaves as a moderator takes a leadership and the factor 2, "multidirection and unification" seems to be evaluated positively. #2-1-1 and #2-3-1 can be included into this type.

**Type 3: Harmonious** In this type, participants easily agree with each other and do not try to find differences among them. They give a number of backchannels and response to the current remark. While Factor 1 and 4 are positively evaluated, Factor 2 tends to be negative. #0-3-1 and #0-3-2 can be included into this type. #0-3-3 seems to be the most extreme case. Participants agree with each other easily, and give up arguing other possibilities quickly. This seems to be the reason why Factor 4 of #0-3-3 is also evaluated negatively.

**Type 4: Discouraged** In this type, the discussion gets stagnant. Participants do not even give backchannels and responses to current remarks. Each remark is followed by noticeably long pause. In addition, conflicts sometimes occur by using offensive expression when they disagree with the current remark (see Mizukami et al, submitted). This type is evaluated quite negatively in all five factors. #0-2-1, #0-2-2, and #0-2-3 can be included into this type.

#### 5. Summary

We showed four types of discussion by Japanese undergraduates. In Japan, students have little opportunities to make a decision as a group. They avoid giving counterarguments to each other, or use offensive expressions. Our study confirms the importance to establish a classroom program in which undergraduates can acquire discussion abilities.

#### 5. References

- Mizukami, E.; Morimoto, I; Suzuki, K; Otsuka, H; Kashioka, H (submitted to GDN2008) Two types of "disagreement" in group discussion by Japanese undergraduates..
- Suzuki, K; Morimoto, I; Mizukami, E; Otsuka, H; Isahara, H (forthcoming). An exploratory study for analyzing interactional processes of group discussion: The case of a focus group interview", *AI & Society*.