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Influences of Debate Training on Its Participants

Effects of Critical Thinking Abilities

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ABSTRACT

The number of organizations in private and public sectors holding debate training programs has increased due to the increased concern to improve those participants' critical thinking, communication and leadership skills in Japan in the last decade. Yet, the research on the actual effects of those training programs has been limited. If the effects have not been confirmed yet, why should the organizations keep investing their money into the training programs? What are the actual benefits for the participants of the training? Those are the main research questions for the authors as debate instructors and communication researchers. The previous research using questionnaires suggests that perceived benefits of such debate-training participants include skills in critical thinking, research, listening, presentation, and leadership. This research suggests that critical thinking skill is among the highest on the list. Based on such perceptive data, this research will further investigate the effects of the critical thinking skills of the participants using a test measure to attempt to answer the question about the effects of debate training.

INTRODUCTION

The purpose of this paper is to illustrate two empirical analyses about (1) the influences of Japanese-language debate training on adult participants' work and private lives, and (2) the effects of debate training on participants' critical thinking ability.

Several previous and on-going debate-training programs[3] were selected for case studies (Kamada, 2000). The introductory training course took twelve to fourteen hours during which participants learned the principles of debate and experienced a few practice debates. Some of the participants received follow-up training program for about thirty hours or longer.

Questionnaires and direct interviews of the participants were conducted by one of the

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[3] The debate training programs selected for research were: (1) four in-service training programs for municipal section chiefs (three in Kyushu and one in Hiroshima) taught by three different debate instructors in 1999; and (2) four major private companies' in-service training programs for middle management and new employees taught by four different instructors from 1995 to 1999. The total number of the participants was 987. This paper uses only the data from (1) above.

authors (Kamada) in order to assess the influences of the training to ascertain the relations between the program organizers' goals and the perceptions of the participants before and after the training programs. After two or three months had passed in each training program, the researcher interviewed several participants, job supervisors and family members about their perceptions of the influence that the training programs had on the participants' work and private lives.

Although previous research reported participants' perceived effects on critical thinking skills of both Japanese-language debate training (Kamada, 1999) and English-language college students with tournament debating experiences (Colbert, 1987, 1993; Usui, 1992; Allen, Berkowitz, Hunt, & Louden, 1999; Inoue & Nakano in press), no empirical research has been conducted to measure the effects of critical thinking abilities of participants in Japanese-language debate training programs. Thus in this research project, one of the most perceived effects, critical thinking ability is examined on adult participants in Japanese debate training using a written test developed by the authors.

The analysis includes patterns of the results of the questionnaires, interviews and the pilot test's results of a critical thinking test in combination with previous studies and testimonies of the training organizers. Further research needs are also considered.

In the remaining sections of this paper, first, we will discuss research using written questionnaires responded by debate training participants and oral interviews of those participants and organizers. We will then examine a test measure under development.

QUESTIONNAIRES AND INTERVIEWS

Methods

The questionnaires (written in Japanese) were completed by all the 155 participants immediately before and after each of the four training programs held in Kyushu and Hiroshima. Responses to open-ended questions were merged based on similarity (cf. Williams, McGee & Worth, 2001).

All the three open-ended questions before the introductory trainings were as follows:

Pre-Training Question 1. How much do you know about debate?
Pre-Training Question 2. Have you ever participated in a debate competition or practice?
Pre-Training Question 3. What do you want to learn from the debate training?

Pre-training Questions 1 and 2 were intended to assess the debate experiences of all the

participants. We excluded the experienced participants from our research informants based on the responses to the above two questions, because the purpose of this study is to purely observe the effects of the debate training in question. Pre-training Question 3 was asked to assess the participants' perceptive gaps between before and after the trainings in order to compare it with the results of post-training questions below after the training.

Among the questions after debate training, post-training Questions 1 and 2 were asked to find difficulties and benefits perceived by the participants in debate training:[4]

Post-Training Question 1. What difficulties did you have during the debate training?
Post-Training Question 2. What benefits do you think you have got from the debate training?

In addition to the questionnaires, one of the authors (Kamada) interviewed several participants, their supervisors in their office, and the organizers in charge of the debate training a few months after each training courses. These interviews enabled us to obtain more detailed perceptions of the effects not only from the participants but also from people around them.

Results and Discussion

In the analysis of the responses obtained in the written questionnaires, individual responses were classified into dozens of categories by the authors.[5] Sampled coding procedures were ascertained by several other coders. The major categories that emerged from this procedures are listed in Table 1 (pre-training expectations), Table 2 (post-training felt difficulties), and Table 3 (post-training felt benefits).

Before the training (Table 1), the participants expected, quite naturally, that they would like to "learn how to debate". In terms of specific skills they expected to learn, "speaking" came first. Learning "listening" and "research" skills was expected by only a few. "Logical thinking" was also expected by the moderate number of the participants.

Table 2 gives the categories of responses to post-training Question 2 (difficulties). The top 5 difficulties given by the participants after the training were shown and those top 5 responses made up almost 80% of the total responses. The most frequent response was "listening skills." If we further combine "logical analysis" and "critical thinking," such skills occupied the top. The responses which are not considered skills were excluded from the list in Table 2, although unspecified "having difficulty" was the most frequent response from the debate-training participants. And a response of "time constraint during the training" was the

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[4] The questionnaire included other questions, which are not analyzed in this paper.
[5] This section reports the only relevant parts of the results of the questionnaires; the entire results are obtainable from the authors.

second most frequent non-skill response from the participants.

Post-training Question 3 concerning the benefits of participation in the training, had a total of 266 responses. The top 5 benefits reported are listed in Table 2 below. The most frequent response on the post-training question was "listening skills." Again, if we combine "logical analysis" and "critical thinking," they were the most frequently given benefits. "Speaking/presentation skills" were not popular skills mentioned as benefits.

Table 1: Expectations for Debate Participation

Rank	Category	Frequency	Proportion
1	Speaking skills	45	27%
2	Learning how to debate	42	25%
3	Logical analysis skills	14	8%
4	Objective perspective	10	6%
5	Listening skills	5	3%
6	Research skills	3	2%
	Others	47	28%
	Total	166	100%

Table 2: Difficult Skills of Debate Participation

Rank	Category	Frequency	Proportion
1	Listening skills	51	22%
2	Research skills	40	17%
3	Logical analysis skills	32	14%
4	Critical thinking skills	31	13%
5	Presentation skills	23	10%
	Others	54	23%
	Total	231	100%

Table 3: Benefits of Debate Participation

Rank	Category	Frequency	Proportion
1	Listening skills	56	21%
2	Logical analysis skills	36	14%
3	Critical thinking skills	35	13%
4	Research skills	31	12%
5	Objective perspective	26	10%
	Others	82	31%
	Total	266	100%

The purpose of the interview was to obtain qualitative data to supplement the responses obtained from the questionnaire research. Interviews were conducted with the organizers of the in-service training programs and supervisors of the participants on both overall and specific benefits of the debate training programs a few months after each debate training.[6]

First, the goals of the organizers of Japanese debate training programs were almost unanimously to develop the participants' critical or logical thinking skills, research skills and logical presentation skills. The organizers and supervisors' responses were positive pointing to the improvement of those logical thinking and presentation skills of the participants in general. Many of them suggested that their in-house evaluation questionnaires were also positively responded to by the participants in terms of satisfaction with the trainings.

Some supervisors appreciated the improvements in logical presentation as a direct effect of the debate training of their subordinates in a series of company meetings. As for the types of job, most of the organizers told us that systems engineers and sales representatives showed much better improvements in the logical presentation addressed to their clients in business dealings as a benefit of debate trainings.

Second, many of the participants themselves, who were interviewed a few months after the training, agreed on the improvements of those skills such as critical thinking, analytical, logical presentation skills, and careful attitudes of listening to others. They were considered as perceived educational benefits in the professional domain from the debate training.

On the other hand, some of the participants disagreed on the benefits of the training both in professional and private domains. Most of such participants responded negatively when they considered their communication with their family members and friends in private and also with their seniors at work who have not been used to critical and objective manners

[6] More detailed results including specific testimonies obtained in some interviews are reported in Kamada (2000).

of verbal communication. Others responded that the debate training had made them sometimes too critical of and objective on any opinion, decision-making process, or topic of conversation in their everyday life so that they tended to delay to act because they were thinking too deeply.

The results of this research suggest several issues. First, we observe a similarity between participants' perceived difficulties and benefits. The four of the responses "listening skills," "research skills," "logical analysis skills," and "critical thinking skills" were exactly the same items given in relation to difficulties and benefits after the training. One of the remaining items "objective perspective" as a benefit may also be included in critical thinking skills. Since this perspective change is considered easier than acquiring skills within a short training program, it was probably not considered difficult. On the other hand, "presentation skills" may have been considered difficult and yet to be improved within a short program. However, the follow-up interviews suggest that such skills indeed developed among the participants.

We assume this similarity would not be a simple coincident but it would implicate that the felt degree of difficulties and benefits were both strongly impressed as the significance of those skills. If the research methods are asking the perception of the participants with more structured questionnaires and interviews, a category list may well be set up including the participants' perceived priority and difficulties of a educational program (cf. Brown, 1996).

Second, the participants before training had a broad expectation of learning how to debate but after the training they had more specific ideas of logical/critical skills as well as listening and research skills. This shows that the training programs were successful in that the participants through the training process came to realize both difficulties and benefits of debate training. The interviews suggest those skills were indeed developed further after a few months of the training, implying the lasting influences of the training.

Third, "speaking skills" was on the top of the list before the training but after the training, a similar category "presentation skills" was felt difficult but was not considered as a benefit by many. The skills were, in fact, improved as we found in the interviews a few moths after the training. Thus speaking/presentation skills do not seem to improve noticeably in a short program but it seems that the foundation of such skills is learnt in the program and the actual skills improve over the period of a few months.

Fourth, another marked result that was already mentioned previously (Kamada, 1999) was but confirmed in this research again in that perceived enhancement of listening skills was not anticipated as one of the top benefits of the training. Listening skills were not expected as an important benefit of debate training by the participants or the program organizers in companies and government agencies. Listening is often ignored as well by the previous writings on academic debate.

Listening was the top list item among the difficulties and benefits after the training. Even if logical/critical skills are combined, listening will still be the second most frequently given benefit. The most participants who were interviewed after their debating experiences responded that they had difficulties in taking notes of what other speakers said since they were not used to listening to what's told in such an intensive manner in their everyday life, even in business. This shows that the participants perceive the debate training as both benefits and difficulties not simply because of the nature of debate training's special or highly demanding listening tasks or speakers' unusually fast speech delivery during a competition in the training but also because of their scarce experiences of intensive listening in their real life.

Fifth, the category "research skills" requires careful analysis. They were only moderately considered as important before the training but they attracted more attention after the training. In the particular type of debate training in question now, researching the topic of debate and find supporting materials external to the speaker (often from published sources) is very important. Within a short training course, research probably poses more difficulties since the participants do not have time or access to the library and the Internet. And so they did not really feel they improved in research skills. This question of research leads to a question of time constraint as a possible problem in this kind of training program.

As the most frequent response of disadvantage, lack of time has already been referred to in the previous study for college tournament debaters (Williams, & McGee, & Worth, 2001). Both researching for a lot of evidence and constructing arguments on both sides of the policy debate topic were the main constraints in terms of spending time, according to the responses to the post-training Question 2 and many interviews of the participants conducted after the training.

This shortage of total amount of preparation time available for a debate competition, however, was not the inherent problem of such a short workshop-type introductory training program (called "seminar" in Japan). Both participants of the two-consecutive-day debate trainings and those of the follow-up debate training program that stretches over three months also responded with the lack of time as the most difficult. When several training organizers were asked how much time was available for such type of training, almost all of them responded that they would give an introductory training maximum of two days (15 hours). Several participants of the follow-up debate training in their interview answered the question why they consumed much time and the most frequent response was "the more we have time, the more we research on the topic and think over arguments."[7]

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[7] A more extemporaneous style of debating called "Parliamentary Debate" does not require external supporting materials. An interesting discussion of the interaction between different research needs and required time in debate programs is found in Inoue & Nakano (in press) in the context of intercollegiate debating.

Lastly, the most frequent response in the domain of disadvantage of the debate training was the slowing-down of the decision-making in a real life situation due to a too critical attitude developed through a lot of experiences in debate competition. This disadvantage is not an inherent problem of the debate training. Whenever someone engages in critical decision-making activities, he/she would take longer time enough to make his/her reasoned decision. As we showed above, the most perceptive benefit of debate training was critical skills, so such skills taken up by the participants themselves are in fact positive in that they make the person not hasty, or jumping to a conclusion, in a negative sense but cautious enough to make their critical decisions objectively.[8] A critical attitude also means that one is open to any criticism of a decision process according to some of the participants' responses for the reason, and in a way this is also one of the important attitudes in the business world in which things are changing very rapidly. Smith shows being a critical thinker is a good business attitude as follows:

> . . . when set in a relationship of tension with their opposite attitudes--openness, humbleness, insistence on clarity and precision--the resulting dialectic can help the critical thinker bridge the chasm between right thinking and right action, between being skeptical all the time and knowing when skepticism is most appropriate and valuable. (Smith, 1995, p. 80)

So far, we have discussed the results obtained from the questionnaires and interviews in terms of the effects of debate training programs. Before moving on to the discussion of the development of a test measure of critical thinking skills, we would like to discuss some previous studies on critical thinking and debate training, which are the basis of the *Shikoo Tesuto* or "Thinking Test" in this research.

CRITICAL THINKING SKILLS AND DEBATE TRAINING

The relationship between critical thinking skills and debate training has long been discussed in American contexts. Here are some pertinent quotations:

> In a broader sense, critical thinking is not only a goal of debate training, but is a goal of higher education. Annis and Annis (1979), and Katula and Martin (1984) acknowledge the importance of higher education's role in teaching their students critical thinking skills. Since the late

[8] A slower decision-making due to debate training may be counter-intuitive. The point here is that a decision-making with careful examination of relevant information is slower than a decision-making without such examination. Given the same amount of information to process to make a critical decision, debate training should be able to help us make a quicker decision.

> 1940's many institutions of higher learning have responded to their goal by supporting debate programs. (Colbert, 1987, p. 194)

> The results indicate that all methods of communication skill training improvement generate gains in critical thinking. The largest effect, however, was observed for competitive forensic participation when compared to a public speaking class (d=.89) or an argumentation class (d=1.14). . . . Participation in forensics demonstrated the largest improvement in critical thinking scores whether considering longitudinal or cross-sectional designs. (Allen, Berkowitz, Hunt, & Louden, 1999, p. 26-27)

> . . . the long-held claim that debate fosters the development of analytical skills and critical thinking is shared by today's debaters. This claim dates back to Howell (1943) and had been repeated in various forms since (e.g., Allen, Berkowitz, & Louden, 1995; Bradley & Mulvaney, 1964; Beckman, 1955; Colbert & Biggers, 1985; Jackson, 1961; Murphy & Samosky, 1993; Williams, 1951). (Williams, McGee & Worth, 2001, p. 204)

Colleges and universities in the U.S. offer mainly two types of courses in critical thinking, one is logic courses taught by philosophers and the other is argumentation courses taught by communication/speech scholars. Unlike in Japan, "critical thinking is categorized as a subject of 'informal logic' evolved from the discipline of rhetoric in the U.S. And the critical thinking skills have been also taught as debate and speech education in U.S. colleges" (Tsuchiya, 1995, p. 110; translation by the authors). Though such instructors are scholars of different fields and disciplines, the popularity of such courses illustrates the higher priority of critical thinking in the U.S. academic environment not only in philosophy but also in speech communication in contrast to Japan's far less emphasis on the importance of critical thinking education, though Japan's education is changing in this respect.

Against this background, the Japanese version of critical thinking ability test, or *Shikoo Tesuto* has been developed to measure the effects of debate training for this research. Also seen from the previous studies, Critical Thinking Appraisal (Watson & Glaser, 1964) has been the most frequently used among the researchers (Allen, Berkowitz, Hunt, & Louden, 1999). Thus our *Shikoo Tesuto* also most heavily relies on the Critical Thinking Appraisal in its creation.

Validity of the Watson-Glaser Tests

The Watson-Glaser tests, the basis of *Shikoo Tesuto*, are considered "the dominant forms of measurement for critical thinking" (Watson, & Glaser 1964, p. 4) and "the most widely used standardized test for measuring critical thinking ability available in the published literature" (McPeck, 1981, p. 132). Although the tests have a history of adequate reliability, some

questions for its validity have been raised and the major concerns will be discussed in this section.

The first specific question raised on the test was the definition of "inference" which is one of the five subtest questions in the Watson-Glaser tests:

> The confusion I refer to here stems from Watson's and Glaser's vague understanding of what an inference is. In particular, they have confused the long-established distinction between a proposition, which may be true or false, and an inference, which may be valid or invalid. . . . Inferences are either valid or invalid and should never be described as 'true'. Witness, for example, their description of an inference, as described in the manual for the test: *Inference.* (Twenty items) Samples ability to discriminate among degrees of truth or falsity of inferences drawn from given data. (McPeck, 1981, pp. 133-134)

McPeck quoted above 1964 version of the Watson-Glaser tests. The latest available version of the test also has the same description on the subtest question, "inference" as "Discriminating among the degrees of truth or falsity of inferences drawn from given data." in the description of the subtest item 1980 Watson-Glaser Critical Thinking test manual (Watson & Glaser 1980a, 1980b).

But in an ordinary language use (*Longman Advanced American Dictionary*), "validity" is defined as "the state of being real, true, or based on facts." So using true or false question is not necessarily a confused interpretation of the word "valid" as McPeck argued. And the word "inference" is also defined as "something that you think is probably true, based on information that you already know" in the same dictionary. So the definition of the alternative answer labels of Watson-Glaser Critical Thinking subtest ("inference is true, probably true, insufficient data, probably false and false") is not a confusion as McPeck described.

The second question raised by McPeck (1981) to the test is that except for the information written in the test items, outside or additional personal knowledge of a test taker has to be excluded in answering some of the subtest questions:

> If such information is required, then the question is not about inference, because people's knowledge, information and experience differ and this will undoubtedly affect their answers. (p. 134)

Unlike a mathematic test, however, some of the information of a question in the critical-thinking test requires the test taker to judge the perceived truth or falsity based on his/her personal knowledge.

To those two questions raised by McPeck, Kamada (2004, p. 45) responded in order to confirm the validity of Watson-Glaser tests. In a nutshell of his paper, Watson-Glaser Critical Thinking Test has adequate validity (Watson & Glaser, 1980a, 1980b; Greenstreet, 1993; Hill,

1993).

Lastly in measuring the effects of critical thinking of debate training, Sanaga (2002) raised a question as to whether the use of a paper-and-pencil-style test of Watson-Glaser was unrealistic. On this point, if the test taker accepts the underlying rules involved in various forms of reasoning, the test of critical thinking is valid. (Allen, Berkowitz, Hunt & Loudon, 1999, p. 20). And considering the validity of a test measure, any tests have some challenges in their use. No perfectly valid test exists. For instance, it should be interpreted realistic as a critical thinking test measure that 40 students in a class take the test together under the same controlled condition like other standardized language proficiency tests. So if a test has adequate usefulness, it should be valid as a measure (Bachman & Palmer, 1996).

DEVELOPING A THINKING TEST

Test Measure

As an empirical method to assess the effects of the training, the authors have developed a critical thinking test in Japanese based primarily on the following existing tests: Critical Thinking Appraisal (Watson & Glaser, 1964); Critical Thinking Appraisal of Japanese, revised version (S. Inoue, 1983); Critical Thinking Japanese Test (Usui, 1992); Cornell Critical Thinking Test (Ennis & Millman, 1985); the GRE (Graduate Record Examinations) General Test (Brownstein, Weiner, & Green, 1999). Other books on logical and critical thinking skills were also used as references.

This critical thinking test is called *Shikoo Tesuto* in Japanese (literally "Thinking Test") and so we are referring to the test as such in this article. The test takes 30 minutes and consists of 29 questions. Although the initial research plan of using a test was to measure the effects on critical thinking skills of adults' participants in debate training based on Watson & Glaser's Critical Thinking test (60 minutes), time constraint is the major obstacle to conducting the test considering the amount of time available for a typical training program, which is 10-14 hours on average.

60 minutes in total at a maximum is acceptable for businesses or municipalities to conduct such an experimental test, according to almost all the organizers in charge of the debate training we interviewed. *Shikoo Tesuto* is designed to complete its measure in two 30-minute test sessions: before and after the debate training. Then the changes are examined in term of average scores, responses to each question between the first and second tests, and the comparison of those test takers experienced with debate and those not experienced.

Shikoo Tesuto comprises five categories: 1. Definition (defining a problem or key

concepts), 2. Reasoning (evaluating evidence or conclusions correctly based on warrants), 3. Inference (discerning the validity of information drawn from data), 4. Recognition of Assumptions (recognizing stated and unstated assumptions), 5. Deduction (drawing valid conclusions from two premises). These five categories of the test were selected mainly in correspondence with the test items in Watson-Glaser Critical Thinking Appraisal (1980a), which defines critical thinking as "a composite of attitudes, knowledge, and skills." (p. 1) It includes:

> . . . (1) attitudes of inquiry that involve an ability to recognize the existence of problems and an acceptance of the general need for evidence in support of what is asserted to be true; (2) knowledge of the nature of valid inferences, abstractions, and generalizations in which the weight or accuracy of different kinds of evidence are logically determined; and (3) skills in employing and applying the above attitudes and knowledge. (Watson & Glaser, 1980a, p. 1)

Shikoo Tesuto "Thinking Test"

In the process of developing the *Shikoo Tesuto* for the current research, the first two questions above by McPeck (1981) were taken into consideration. They are: (1) whether one of the subtest questions, inference, should be measured by clear-cut truth or falsity and (2) how to eliminate the involvements of personal judgments based on outside and personal knowledge in answering the test question.

On the question (1), in the test instruction of *Shikoo Tesuto* we used the same expressions of the five degrees of labels of the Watson-Glaser's inference subtests: true, probably true, insufficient data, probably false and false by giving functional equivalents in Japanese. As we explained above, the interpretation of five degrees of alternatives is valid so that a test taker can judge not only clear-cut true or false but also the intermediate degrees of "validity". The Japanese equivalents also allow "true" and "false" on the extremes and three intermediate degrees of validity in between.

On the question (2), the elimination of outside and personal knowledge of a test taker in answering the questions was attempted by including two test instructions that answers are to be determined solely on the basis of the given facts and that each fact involved in a statement of the question is to be regarded as true.

In addition, we selected widely known topics for the questions, using source materials from non-technical articles of the two most widely circulated newspapers in Japan, the *Yomiuri Shimbun* and the *Asahi Shimbun*. We also made utmost efforts to write the test questions as self-contained as possible (requiring no outside information) (McPeck, 1981, p. 140) in order to measure solely a test taker's critical thinking skills.

Pilot Test Measure

The pilot test is drawn from the first test of the two-test package *Shikoo Tesuto*. It was administered to 27 adult participants of debate training during April, 2001. The test takers consisted of 5 male and 5 female experienced debaters, and 7 male and 10 female non-experienced debaters. The experienced debaters' average age was 36 and non-experienced was 39. In addition to the pilot research on non-student adults, college students were also asked to take *Shikoo Tesuto* from 2001 to 2002 to improve the test feasibility and validity in terms of the test time and accuracy of the average score. Over 300 students of both debate and non-debate classes at Kyushu University, a major national university in Japan, took this test.

Results of the Pilot Shikoo Tesuto "Thinking Test"

Table 4 shows the results of the first pilot-*Shikoo Tesuto* in 2001. These adult test takers had been taking a Japanese debate follow-up course at the Asahi Culture Center and Fukuoka Debating Society.[9] In both Tables 4 and 5, "experienced" means that the test-taker had competitive debate experiences in Japanese with more than 3 debate rounds before the test. Typical competition experiences of the debate participants were between 10 and 20 rounds. "Non-debaters" means that the test taker had never participated in either Japanese or English debate competition. As in Table 4 the experienced scored an average of 23 while the non-experienced scored an average of 18. The combined score of the test was 20 on average.

Table 5 shows the results of another group who took the pilot-*Shikoo Tesuto*, undergraduate students of Kyushu University. They took the same test at the beginning and at the end of the academic year 2002 (about 20 class meetings, 90 minutes each). The debate class students attended a course as part of the requirement to obtain a teaching certificate of social and civics studies for elementary, junior high, and senior high schools, in which most of the course was devoted to academic debate practices. The non-debate class students attended an introductory seminar course on law and politics.

Table 4: Pilot-Shikoo Tesuto Results for Adults (2001)

	Participants (N=27)	Average Scores (Max.=29)
Experienced (over 3 rounds)	10	23 (79%)
Non-debaters	17	18 (62%)
Total	27	20 (69%)

[9] The Asahi Culture Center offers a variety of adult classes whose topics include both practical and cultural subjects. The debate course started there in 1999. Fukuoka Debating Society is a weekend debating club for adults, which started in 1995.

Table 5: Shikoo Tesuto Results for Adults (2002)

	Participants (N=32)	Average Scores (Max.=29)	
		Pre-training	Post-training
Debate class	17	18 (62%)	20 (69%)
Non-debate class	15	18 (62%)	19 (65%)
Total	32	18 (62%)	19 (67%)

In the first adult group, as Table 4 shows, the experienced debaters scored 23 out of 29 (the percentile score of 79%), whereas non-debaters scored 18 out of 29 (62%). The percentile gap between the average score of them was 17%. The average test score of both experienced and non-experienced debaters was 20 (69%).

The second test results (Table 5) show that the university students took social and civics (debate class) scored 18 (62%) before and 20 (69%) after taking the debate classes, while students of introductory seminar on law and politics (non-debate class) scored 18 (62%) before and 19 (65%) after taking the non-debate classes. These test results show that the average scores of debate class increased more than those of non-debate class by 1 point (3.5%).

The test scores of the first *Shikoo Tesuto* showed a consistent pattern that those adults with more debate training (with more competitive rounds and/or going through a longer training program) scored higher than those with no or less debate training. Although the number of subjects for analysis is too small and the selection is not completely justified as objective research (i.e., without randomized research design), the pattern warrants further research for empirical quantifiable effects of debate training on its participants.

Another finding was that so-called "ceiling effects" might intervene the growth of the average scores. The "ceiling effects" is the term used to note that a group cannot improve greatly if the performance is already near the top of the scale (Allen, Berkowitz, Hunt & Loudon, 1999, p. 20). Therefore, future research should also consider the "ceiling effects" in the evaluation of longitudinal study.

CONCLUSION

The current research was conducted to illustrate the influences of debate training on adult participants' work and private lives, and the effects of training on critical thinking abilities. The perceived benefits of critical thinking through debate training for adults' participants share a view among the training participants and organizers according to the results of the research using questionnaires and interviews. The other categories perceived by

the debate training participants as benefits were listening, research skills, and objective view. And the results of pilot-*Shikoo Tesuto* "Thinking Test" suggest, at least potentially, the effects of critical thinking skills' improvement among the participants of debate programs before and after the training.

Some potential limitations of the current research, however, cannot be denied. Many of the findings were based the participants' own perceptions and impressions of people around them. The results of the test measure should rely on the larger size of the samples (test takers) and objective selection of the test takers.

Moreover, the more specific training effects should be further analyzed by a closer look at questionnaire responses and at the test results of *Shikoo Tesuto*. For example, the item-by-item analysis of *Shikoo Tesuto* is necessary for instructors/organizers to propose more adequate advice for each training participants depending on the participants of business position, type of businesses and the specific target skills aimed at by them. Such efforts will also help the development of much better debate training programs and instructions.

Logistically, furthermore, *Shikoo Tesuto* "Thinking Test" might well be administered on the web site to save time and to increase the samples to make the results more reliable.

Finally though some disadvantages of the trainings were reported such as having difficulties, time constraint, and slow decision-making, and becoming too critical in terms of impersonal relationship, the first two are not inherent on debate trainings. And as for the third and fourth disadvantages, i.e., time management and human relationship respectively, the instructors should keep it in mind that acquiring critical skills is not intended to change the participants' personality but rather that the debate training is intended to improve their skills to think or speak more effectively in the public domain. Ideally the participants should be able to use the critical skills in the right occasions of communication in both their living and work.

REFERENCES

Allen, M., Berkowitz, S., Hunt, S., Louden, A. (1999). A meta-analysis of the impact of forensics and communication education on critical thinking. *Communication Education, 48*, 18-30.

Annis, L. F., & Annis, D. B. (1979). The impact of philosophy on student's critical thinking ability. *Contemporary Education Psychology, 4*, 219-226.

Bachman, L. F., & Palmer, A. S. (1996). *Language Testing in Practice*. Oxford University Press.

Brown, J. D. (1996). *Testing in Language Programs*. New Jersey: Prentice Hall Regents.

Brownstein, S. C., Weiner, M., & Green S. W. (1999). *How to Prepare for the GRE*, (13th ed.).

New York: Barron's Educational Series.

Colbert, K. R. (1987). The effects of CEDA and NDT debate training on critical thinking ability. *Journal of the American Forensic Association, 23*, 194-201.

Colbert, K. R. (1993). The effects of debate participation on argumentative and verbal aggression. *Communication Education, 42*, 206-214.

Ennis, R. H,. & Millman, J. (1985). *Cornell Critical Thinking Test Form Z.* Pacific Grove: Midwest Publications.

Greenstreet, R. (1993). Academic debate and critical thinking: A look at the evidence. *National Forensic Journal, 11*, 13-28.

Hill, B. (1993). The value of competitive debate as a vehicle for promoting development of critical thinking ability. *CEDA yearbook, 14*, 1-22.

Inoue, N., & Nakano, M. (in press). The benefits and costs of participating in competitive debate activities: Differences between Japanese and American college students. In van Eemeren, F. H., Hazen, M. D., Houtlosser, P., & Williams, D. C. (Eds.), *Contemporary Perspectives on Argumentation: Views from the Venice Argumentation Conference.* Amsterdam: Sic Sat.

Inoue, S. (1983). *Hihan shikoo ryoku to sono sokutei [The measurement of critical thinking ability]. Dokusho Kagaku [The Science of Reading], 27*, 131-142.

Kamada, H. (1999). *Nihon ni okeru dibeeto kenshuu: Nihongo dibeeto kenshuu jukoosha eno eikyoo [Debate trainings in Japan: Effects on the participants of Japanese debate training]. Proceedings of the 6th Convention of the Communication Association of Japan, Kyushu Chapter*, 56-65.

Kamada, H. (2000). *Nihon ni okeru shakaijin dibeeto kenshuu: Nihongo dibeeto kenshuu jukoosha eno eikyoo [Japanese debate training for adults: Influences on the participants in debate training in Japanese].* In Suzuki, T., Yano, Y., & Kato, T. (Eds.), *Proceedings of the 1st Tokyo Conference on Argumentation* (pp. 93-103). Tokyo: Japan Debate Association.

Kamada, H. (2004). *Kyooshoku kamoku "Shakai Koominka Shidoohoo" ni mirareru dibeeto jugyoo no eikyoo [Effects of debate instruction on its participants in a teaching diploma course "Social and Civics Studies"]. Kyushu Journal of Higher Education, 10*, 41-58. (Research and Development Center for Higher Education, Kyushu University)

McPeck, J. E. (1981). *Critical Thinking and Education.* Oxford: Martin Robertson.

Sanaga, T. (2002). Haabaado Shakaika "Shakaiteki Ronsoo Mondai Bunseki Tesuto" no kentoo. [Harvard Social Studies Project: A review of the Social Issues Analysis Test]. A paper presented at the 52nd National Conference, Japanese Association for the Social Studies, October 26-27, Chiba University, Chiba, Japan.

Smith, R. (1995). Critical thinking skills and the MBA case method: An academic ESP

challenge. *Working Papers on Language Acquisition and Education, 6,* 76-101. (International University of Japan).

Tsuchiya, S. (1995). Hokubei no tetsugaku kyooiku jijoo [Philosophy education in North America]. In Asahi Shimbun (Ed.), *Tetsugaku ga Wakaru [Understanding Philosophy] (AERA Mook, 6)* (pp. 108-111). Tokyo: Asahi Shimbun.

Usui, N. (1992). Effect of debate training on critical thinking ability: A Japanese case. *Debate Forum, 8,* 32-41.

Watson, G., & Glaser, E. (1964). *Watson-Glaser Critical Thinking Appraisal YM & ZM.* New York: Harcourt Brace Jovanovich.

Watson, G., & Glaser, E. (1980a). *Watson-Glaser Critical Thinking Appraisal Manual, Forms A & B.* San Antonio: Harcourt Brace Jovanovich.

Watson, G., & Glaser, E. (1980b). *Watson-Glaser Critical Thinking Appraisal, Forms A & B.* San Antonio: Harcourt Brace Jovanovich.

William, D. E., McGee, R. M., & Worth, D. S. (2001). University student perceptions of the efficacy of debate participation: An empirical investigation. *Argumentation and Advocacy, 37,* 198-209.