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A Learning Support Method to Raise Awareness of the Knowledge-to-Action Gap in Information Ethics

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Abstract: If learners cannot form an intention to take an appropriate action regarding the knowledge of information ethics, it cannot be said that the learners acquired working knowledge of ethical principles. It is necessary to conduct a learning activity so that they can realize the difference between behaviors in a realm of learning/training situation and those in real-life situations. In the present study, we propose a learning support method to raise self-awareness of the inconsistency between knowledge and intention in information ethics. On the basis of the proposed method we develop an education program, and conduct the program for first-year university students. The program consists of two phases. In the first phase, students answered paper-and-pencil tests consisting of two tasks: behavior selection task to confirm the knowledge-to-action gap, and behavior evaluation task to ensure factors contributing to the gap. In the second phase, students were shown the graph of experimental results as feedback. As results of quantitative and qualitative analysis on questionnaire for evaluating learning activities, the program allowed students to capture the gap as their own matters and to recognize the activities as learning opportunity on information ethics. In addition, the program enhanced motivation of the participants toward learning information ethical behavior.

Keywords: knowledge-to-action gap, information ethics, learning support method

1. Introduction

As information technology goes through rapid advancement, each individual is increasingly required to have a maturity of information ethics. Ministry of Education, Japan (2009, p.37) defines Information ethics as "the thinking and attitude that serve as the foundation for conducting appropriate activities in information society." As implied by this definition, one cannot say he or she has acquired working knowledge about information ethics simply by possessing knowledge on the matter unless behavioral intention to actualize such knowledge into action has formed. For this reason, it is crucial to develop teaching methods and materials designed to foster such an attitude toward actualizing knowledge of information ethics into action. Tamada and Matsuda (2000, 2004) advocated three kinds of knowledge play important roles in the education of information ethics. The three kinds of knowledge are: "knowledge on information technology" that is the characteristics and technological limitations of an information-based society, "knowledge on moral norms" that are norms to be adhered, and "knowledge on logical judgement" that is how to make appropriate decisions using the previous two kinds of knowledge and compare them to meet various value standards. In this study, we assume that having learners themselves recognize their own mental process that leads behaviors of going against information ethics (hereafter, "unethical behavior") will aid in fostering the mindset for making appropriate judgments.

For learners to recognize their mental process, it is necessary to conduct a learning activity in which they realize the difference between behaviors they take in a realm of learning/training situation and behaviors they take in real-life situations. Therefore, this study proposes a learning support method to enhance learners' motivation through self-awareness of one's mental process when taking unethical behavior. The proposed method consists of two learning activities. The first activity is to participate in

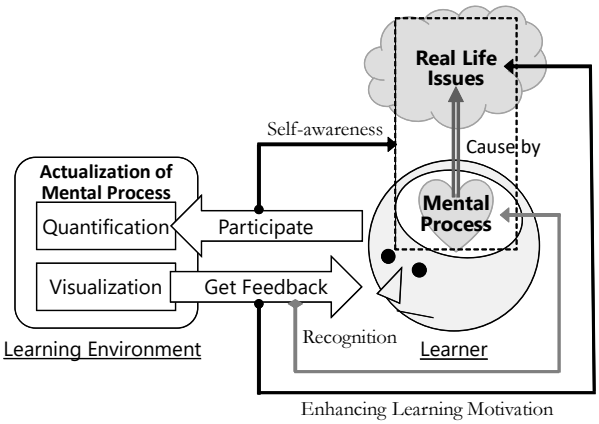


Figure 1. Overview of the learning support method.

questionnaire survey of information ethical behavior conducted as a cognitive psychological experiment (Tanaka, Ikeda, & Hori, 2016) to actualize the difference between knowledge as general principles and behavioral intention they may have in an actual situation. The second activity is to get feedback on the questionnaire results depicted as graph, thereby quantifying the difference between knowledge and behavioral intention.

In the next section, a brief overview of the proposed method is introduced. Section 3 explains an education program based on the proposed method and the way how to put the program into practice for a class of university students. Section 4 presents the result of the learning evaluation questionnaires in the class, and finally concluded with remarks on the further study.

2. Learning Support Method for Recognizing One's Mental Process

Human mental processes have been studied in the field of cognitive psychology and cognitive science. Research on complex cognitive systems or psychological phenomena often employ model-based approaches (Fum, Del, & Stocco, 2007). Miwa et al. viewed model-based approaches not only as research tools for understanding internal processing but also as educational tools for deepening learner's understanding of his/her own cognitive process (Miwa & Terai, 2016; Miwa, Terai, & Shibayama, 2016; Saito, et al., 2015). From such a point of view, they developed a model-based learning environment (DoCoPro) in which the learners construct their cognitive model. In DoCoPro, students learn how to automate the process of solving addition and subtraction problems by using rule-based descriptions of computer programs. In addition, Hulshof et al. demonstrated that subjective experience of a psychological phenomenon and reflection on such experience is effective for a better understanding of a psychological phenomenon (Hulshof, Eysink, Loyens, & De Jong, 2005; Hulshof, & Eysink, 2006). They developed a learning environment (ZAPs), which allows learners to experience a psychological phenomenon through participation into a psychological experiment, and facilitate understanding of the phenomenon by the feedback of experimental results. In ZAPs, students learn scientifically supported psychological phenomena by means of psychological experiments such as an illusion and a mental rotation.

An important idea behind these learning environments is to provide understanding of the mental process by having the learners participate in the actualization of their own mental process, so that they can recognize the process by themselves. In the education program of this study, we adopted a similar approach that includes participation of students in a psychological experiment followed by the feedback of experimental results. However, the learning objective of this study is different from the previous studies. The objective of this study is to make learners become self-aware of real-life issues caused by a mental process and enhance motivation toward learning through the recognition of one's mental process (Figure 1). In the first phase of this education program, a behavior selection task was given as cognitive psychology experiment (Tanaka, Sonoda, Ikeda, and Hori, 2016a, 2016b) to actualize inconsistency between knowledge and behavioral intention in information ethics. This phase was designed to enhance readiness toward learning by promoting self-awareness of the inconsistency. In the second phase, after debriefing session of the behavior selection task, the learners were presented

Table 1: Information ethical behaviors of learning topic.

Ethics in information society	Information security
Chainmail forwarding	Without renewing anti-virus software
Identification of individuals on SNS	Without preventing data loss
Phones in priority seating areas	Password recycling
Digital theft	Password storage
Texting while walking	Without confirming the URL
Understanding and observing with the law	**Wisdom for safety**
Copyright infringement	Without confirming the reliability of information
Portrait right infringement	Paying false bills
Fraudulent access	Replying to unknown senders
Illegal downloading	Without confirming use of personal data
Electromagnetic records by illegal command	Real-time posting

with a graph showing the inconsistency between knowledge and behavioral intention. Note that the result quantified in the graph includes responses of the learners participated in the experiment in the first phase. The inconsistency revealed in the graph may not necessarily be acceptable for the learners. For example, learners may doubt that "it's not that simple" and that "there could be some other reasons". Encountering such unconvinced situation can be momentum for the recognition of inconsistency underlying the learners' mental process, and that will lead to their motivation for understanding the process more deeply. In contrast, in the cases of DoCoPro and Zaps, learners do not cast doubt about the results because their objective of learning is to absorb erudite knowledge.

3. Education Program

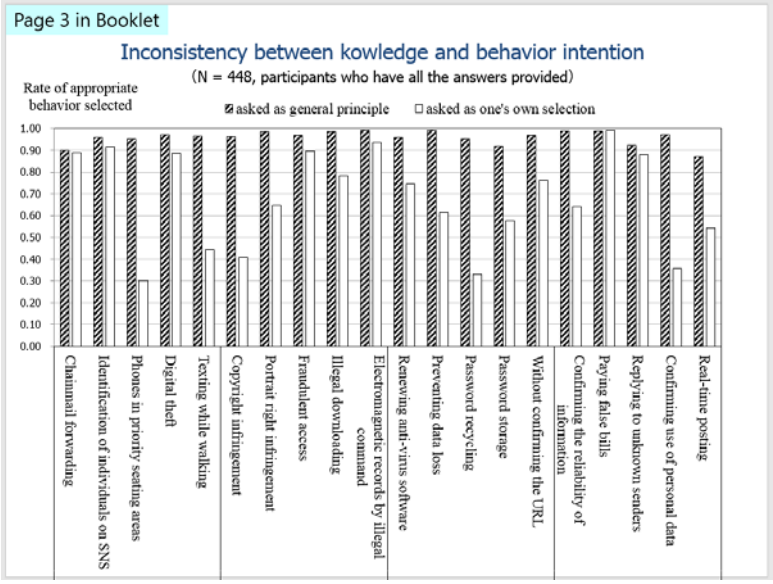
In this study, situations that require information ethical behaviors were sorted out into 20 items (Table 1) sourced from the six textbooks and five supplementary readings, as well as from the Metropolitan Police Department's website. The education program was carried out in the spring semester of 2016 in a class of Introduction to Informatics offered for the first-year university students as an obligatory subject. An information ethics behavioral task (hereafter, "behavioral task") was conducted in 25 minutes during the first lesson. Next week in the second lesson, task debriefing was conducted and the results of the task were presented in a graph (totally in 40 minutes).

3.1 Information Ethics Behavioral Task

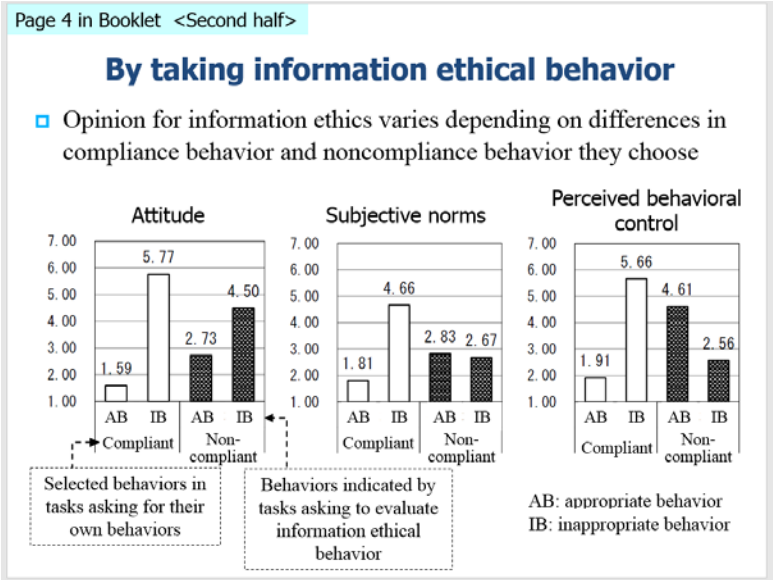
In the behavioral task, the students were asked to engage in two tasks for behavior selection and evaluation. In this behavioral task, the students were placed in a situation in which they had to select an action taking information ethics into account. Our intention here was that the students involved in this task would realize the reality wherein one does not always behave in accordance with appropriate norm, even if they have the ability to comply with. This provides students an opportunity afterwards to think about making them conform to ethical behavior.

3.1.1 Information Ethics Behavior Selection Task

In the information ethics behavior selection task (hereafter, "selection task"), the students were presented with texts explaining the situation setting of each task where information ethical behavior is needed. The students were then presented with the conflicting options of an ethical and unethical behavior. The students responded to the knowledge task ("Which behavior is appropriate in principle when using information technology?") and the intention task ("Which behavior would you yourself choose?"). The situation setting text and subsequent two-alternative questions were prepared based on the descriptions given in textbooks and supplementary readings. In the case of texting while walking, for example, the situation setting text was given as "You receive a message on your smartphone (or



(a) Inconsistency graph as results of the behavior selection task



(b) Factor graph as results of the behavior evaluation task

Figure 2. Graph presented for feedback in the second learning activity (originally in Japanese).

Figure 2 (b), the factor graph was a column graph where the y-axis indicated the mean evaluation value for the factors, while the x-axis showed the behavior selected in the selection task as well as the behavior evaluated in the evaluation task. The students were explained that how the evaluation of factors was different between the students selected the unethical behavior in the intention task and the students selected the ethical behavior.

4. Analysis of Responses from the Learning Evaluation Survey

After the presentation of the inconsistency graph, a survey was conducted to evaluate the learning activities by two kinds of questions on a seven-point scale (1: Strongly disagree, 7: Strongly agree) and free description of the reason for selecting the scale. The first question was to confirm learning opportunity (hereafter, "opportunity question") by asking "Do you feel that this served as an opportunity to think about information ethics?" and the second question to confirm learning motivation ("hereafter, "motivation question) by asking "Do you think this program promoted your motivation for

Table 2: Number of students in each evaluation.

	P-value	NP-value	Binominal test [95%CI]
Behavioral selection in the selection task			
Opportunity Question	270	124	$p < .001$ ** [.64, .73]
Motivation Question	196	198	$p = .003$ ** [.45, .55]
Expected Frequency	168.86	225.14	
Seeing of the inconsistency graph			
Opportunity Question	266	128	$p < .001$ ** [.63, .21]
Motivation Question	213	181	$p < .001$ ** [.49, .59]
Expected Frequency	168.86	225.14	

Note. $N = 394$. CI = confidence interval. ** $p < .01$.

Table 3: Coding rules.

Code name	Main words used for coding
Myself and others	
A1 Applies to myself	myself, personal, self-awareness, empathy
A2 One's surrounding	real-life, everyday, usually, familiar
A3 Family and Friends	family, friend
A4 Others	others, neighborhood, opinions around me, behavior around me
Knowledge-to-action gap	
B1 Inconsistency	inconsisitency, incongruity, discrepancy, conflict in behavior
B2 Knowledge	common sense
B3 Behavior	behave, action, [before or after the word do/take] act or behavior
Learning opportunity	
C1 Interest	interest, concern, doubt, wonder, why
C2 Unexpectedness	surprising, unexpectedly, shock, impact
C3 Realization	realization, recognition, confirmation, find out, actual feeling
Learning motivation	
D1 Consciousness	consern, keep in mind, [before or after the word eye] turn
D2 Reviewing	review, reflect, re-think, change one's mind
D3 Learning	learn, be taught

learning information ethics?" In addition, after the opportunity and motivation questions, a survey was conducted to evaluate the learning activities in the evaluation task by question on a seven-point scale (1: Strongly uninterested, 7: Strongly interested). The question was to confirm the degree of interest in three factors (hereafter, "interest question") by asking "Do you have an interest in each factor of information ethical behavior?" In these learning evaluation surveys, a total of 394 first-year students, who had responded to the behavioral task in the first lesson, were included as analysis subjects.

4.1 Seven-point Scale Evaluation

To examine the effects of engagement in the selection task and reading the inconsistency graph, the seven-point evaluation values in the learning opportunity and motivation questions were divided into two categories: positive evaluation (P-value), and non-positive evaluation (NP-value). The P-value is the cases when the evaluation was higher than the neutral, namely, the value is either 5, 6 or 7, while the NP-value is the cases when the value is either 1, 2, 3 or 4. A binomial test was performed on the number of students whose responses were P-value or NP-value. Considering the number of values allocated to each evaluation category, the test ratio was set as 3:4. For both opportunity and motivation questions, the result demonstrated that the number of students selected P-value was significantly higher than those who selected NP-value (Table 2). From this result, engaging in the selection task and reading the inconsistency graph could be helpful for providing learning opportunities of information ethical behavior and enhancing learning motivation.

Table 4: Cross tabulation and X2 test in confirmation question for learning opportunity.

	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	D1	D2	D3	Number of case
BS	76	44	1	18	14	6	18	25	4	111	17	35	8	344
	(22.09%)	(12.79%)	(0.29%)	(5.23%)	(4.07%)	(1.74%)	(5.23%)	(7.27%)	(1.16%)	(32.27%)	(4.94%)	(10.17%)	(2.33%)	
RG	65	9	0	60	30	3	11	40	15	114	12	16	6	318
	(20.44%)	(2.83%)	(0.00%)	(18.87%)	(9.43%)	(0.94%)	(3.46%)	(12.58%)	(4.72%)	(35.85%)	(3.77%)	(5.03%)	(1.89%)	
Total	141	53	1	78	44	9	29	65	19	225	29	51	14	662
	(21.30%)	(8.01%)	(0.15%)	(11.78%)	(6.65%)	(1.36%)	(4.38%)	(9.82%)	(2.87%)	(33.99%)	(4.38%)	(7.70%)	(2.11%)	
X^2-test	0.18	20.93**	0.00	28.26**	6.82**	0.31	0.85	4.68*	6.27*	0.79	0.30	5.45*	0.02	

Note. N = 394. BS = behavioral selection in the selection task, RG = reading of the inconsistency graph. A1 = applies to myself, A2 = one's surrounding, A3 = family and Friends, A4 = others, B1 = inconsistency, B2 = knowledge, B3 = behavior, C1 = interest, C2 = unexpectedness, C3 = realization, D1 = consciousness, D2 = reviewing, D3 = learning. * p <.05, ** p <.01.

Table 5: Cross tabulation and X2 test in confirmation question for learning motivation.

	A1	A2	A3	A4	B1	B2	B3	C1	C2	C3	D1	D2	D3	Number of case
BS	56	10	2	19	10	7	9	54	5	101	1	6	65	322
	(17.39%)	(3.11%)	(0.62%)	(5.90%)	(3.11%)	(2.17%)	(2.80%)	(16.77%)	(1.55%)	(31.37%)	(0.31%)	(1.86%)	(20.19%)	
RG	44	5	0	36	29	5	10	61	6	111	11	6	59	313
	(14.06%)	(1.60%)	(0.00%)	(11.50%)	(9.27%)	(1.60%)	(3.19%)	(19.49%)	(1.92%)	(35.46%)	(3.51%)	(1.92%)	(18.85%)	
Total	100	15	2	55	39	12	19	115	11	212	12	12	124	635
	(15.75%)	(2.36%)	(0.31%)	(8.66%)	(6.14%)	(1.89%)	(2.99%)	(18.11%)	(1.73%)	(33.39%)	(1.89%)	(1.89%)	(19.53%)	
X^2-test	1.09	0.98	0.474	5.61*	9.41**	0.06	0.00	0.62	0.00	1.02	7.14**	0.00	0.11	

Note. N = 394. BS = behavioral selection in the selection task, RG = reading of the inconsistency graph. A1 = applies to myself, A2 = one's surrounding, A3 = family and Friends, A4 = others, B1 = inconsistency, B2 = knowledge, B3 = behavior, C1 = interest, C2 = unexpectedness, C3 = realization, D1 = consciousness, D2 = reviewing, D3 = learning. * p <.05, ** p <.01.

Furthermore, to examine the effects of engagement in the evaluation task, the seven-point evaluation values in the interest question were divided into two categories: interested evaluation (I-value) for point values 5, 6 or 7; and uninterested evaluation (UI-value) for point values 1, 2, 3 or 4. A binomial test was conducted on the number of students whose responses were I-value or UI-value. Considering the number of values allocated to each evaluation category, the test ratio was set as 3:4. For each of the three factors, the result demonstrated that the number of students selected I-value was significantly higher than those who selected UI-value (Attitude: 187 vs. 207, p = .04, Subjective norms: 199 vs. 195, p = .001, Perceived behavioral control: 209 vs. 185, p < .001). From these results, engaging in the evaluation task could be helpful for generating interest in the factors of information ethical behavior.

4.2 Quantitative Text Analysis

To clarify the overall tendency of the responses filled in the freewriting spaces, a weighted text analysis was conducted with a software for qualitative content analysis called KH Coder (Higuchi, 2014). Table 3 shows the list of coding rules and the key terms for coding. For example, key terms either 'myself' or '(became) aware' is found in a paragraph, a code "apply to myself" is assigned to the paragraph.

In this quantitative text analysis, it is examined what kind of learning opportunities is provided with students as the result of each learning activity. A nominal variable here indicates the two learning activities: the behavioral selection in the selection task and the reading of the inconsistency graph. We performed a cross tabulation and X^2 test to confirm the difference between the number of learning activity codes appeared in the learning activities (Table 4). The result showed there was no significant difference in the occurrence of "applies to myself" code (A1). Concerning "one's surrounding" (A2) and "reviewing" (D2), a significant difference was confirmed in the number of occurrences, where the occurrence in comments for the behavioral selection was higher than that for the reading of the graph. Concerning the "others" (A4), "inconsistency" (B1), "interest" (C1), and "unexpectedness" (C2), a significant difference was found, where the occurrence in the graph reading was higher than that in the behavioral selection. Taking account of the terms such as "one's surrounding" and "reviewing" appeared in the comments on the behavioral selection, it can be inferred that the information ethics behavior selected for questioning by the students provided them with a good opportunity of taking a look at the behavior of people around. On the other hand, the terms such as "others," "inconsistency," "interest," and "unexpectedness" were found in the comments on the graph reading. This result suggests

that receiving a debriefing on the selection task and the inconsistency graph will provide opportunities for paying attention to the belief of classmates regarding the gap between knowledge and behavioral intention.

Next, it is examined whether students' motivation for learning is improved as the result of each learning activity. To confirm the difference in the number of occurrences of the codes found in the survey comments, a cross tabulation and X^2 test were conducted (Table 5). The result showed there was no significant difference in the occurrence of "applies to myself" code (A1). Concerning "others" (A4), "inconsistency" (B1) and "consciousness" (D1), a significant difference was found, where the occurrence in comments for the graph reading was higher than that for the behavioral selection. Since such terms as "others," "inconsistency" and "consciousness" were written down after the graph reading, it is inferred that the debriefing on the selection task and inconsistency graph promoted learning motivation of the students as well as consciousness toward the inconsistency between other people's knowledge and behavioral intention, conceived by their classmates. These results demonstrated that the two learning activities in this education program contributed to achieving the learning objectives.

Furthermore, to confirm the difference in the number of occurrences of codes between the evaluator group for each question, the nominal variable (evaluator group) corresponding to positive and non-positive responses were prepared, and a cross tabulation and X^2 test were conducted. As the result, the number of occurrences of the code "applies to myself" was higher among the P-evaluator group than the NP-evaluator group in all questions of the learning activity (In behavioral selection, opportunity question: $X^2 = 10.20$, $p < .01$, motivation question: $X^2 = 19.79$, $p < .01$. In graph reading, opportunity question: $X^2 = 5.16$, $p < .05$, motivation question: $X^2 = 11.84$, $p < .01$). In the behavioral selection, the number of occurrences of the code "realization" was higher in the NP-evaluator group than the P-evaluator group in the opportunity question (X^2=4.84, $p < .05$). The similar trend was observed in cases of "one's surrounding (X^2= 7.48, $p < .01$)" for learning eagerness in behavioral selection, "inconsistency (X^2= 4.14, $p < .05$)" in the learning impetus in the comments on the graph, and "others ($X^2 = 8.25$, $p < .01$)," "inconsistency ($X^2 = 7.61$ $p < .01$)," and "realization ($X^2 = 5.02$, $p < .01$)" in the learning eagerness in the comments on the graph. No significant difference was confirmed between evaluators in other codes.

Consequently, the implications from the above results were summarized as follows. Learners who positively evaluated the education program became aware of the inconsistency between knowledge and behavioral intention of their own due to the engagement in the behavior selection task. Moreover, the positive learners were aware of inconsistent beliefs of others as the result of engaging in not only the selection task but the reading of the inconsistency graph.

4.3 Descriptive Contents of Freewriting Spaces

The two kinds of descriptions written by learners are connected with deep thinking in a learning activity (Suda, 2017). The one is description of the change of consciousness that learner links past and future self with learning contents. Another is description of the reconfiguration of knowledge that learner doubts and/or considers about learning contents. In what follows, we focus on as the above two kinds descriptions and interpret the response of the freewriting responses at a semantic level, a content analysis of the descriptions was conducted in terms of the learning opportunity and motivation.

4.3.1 Opportunity for Learning Information Ethics

It was observed that self-awareness of unethical behavior was manifested from descriptions. Examples of such descriptions are: "It became commonplace for me to deal with information, and I was doing things that aren't correct as if it's something normal. This learning made me realize this fact once again" (opportunity question about behavioral selection), and "Because there were many things that I did unconsciously, this learning activity made me check my behaviors once again" (opportunity question about behavioral selection).

There were also descriptions showing the self-awareness of inconsistency between knowledge and behaviors, such as "This learning activity served as an opportunity to find the unethical behaviors [I know shouldn't do it but I do because I think it's something that's not that important] which took by myself on a regular basis" (opportunity question about behavioral selection), and "Although I had

knowledge on information ethics, it made me realize that it wasn't seen in my behaviors under various circumstances" (opportunity question about behavioral selection).

Furthermore, there were also descriptions comparing oneself with others as to the inconsistency between knowledge and behavior, such as "When I actually looked at the graph, there were many people who couldn't behave despite having knowledge like me. It made me to re-consider about information ethics" (opportunity question about the graph reading), and "There was a little thing within me that was not able to make the correct selection. The people around me seemed to be unable to do so more than me. So, I felt that I had to behave more properly" (opportunity question about the graph reading). These descriptions suggested that the education program in this study worked for creating awareness of the necessity to learn of information ethics.

4.3.2 Motivating Information Ethics Learning

There were descriptions of concerns about how to learn the ways of resolving the inconsistency between knowledge and behavior, such as "Information ethics is something that everyone has general knowledge of --almost without a doubt-- so, conversely, I would want to learn the means for solving this inconsistency" (motivation question about the graph reading), and "I thought that rather than learning about 'the importance of information ethics,' I would like to know more about preventative measures not to take unethical behavior" (motivation question about behavioral selection).

The other descriptions mentioned the factors that could influence the occurrence of inconsistency between knowledge and behavior, such as "I would like to think deeply as to why there were several people who knew about information ethics as common sense and as morality but could not put into behavior" (motivation question about the graph reading) or "This learning activity made me curious as to its reason, because I could confirm that what kinds of items was inconsistent and how obvious the differences were at a glance" (motivation question about the graph reading) .

Furthermore, some students thought unethical behavior covered in the education program was limited, and motivated to know more in depth about information ethical behavior; for example, "Simple questions as seen in the previous questionnaire made me understand which behavior is correct and which one is incorrect. However, it made me want to learn because I don't think I could have answered correctly at all, if these topics had gone deeper" (motivation question about behavioral selection), and "I think there are more inconsistencies between knowledge and behavior other than the ones seen here. It aroused my interests more." (motivation question about behavioral selection). From these descriptions, the learning activities in this education program can be anticipated to promote students' motivation toward learning information ethics.

4.3.3 Dissatisfaction with Learning Activity

On the other hand, there were students who did not perceive this education program positively. Some students commented that they had already known appropriate behavior as knowledge: "I have already learned most of the knowledge in high school" (opportunity question about graph reading), and "I already know a lot of matters. I don't particularly feel the need for further learning about information ethics" (opportunity question about behavioral selection).

There were also accounts that attributed the inconsistency as a known fact, such as "Indeed, I think it served as an opportunity to think about information ethics. However, I suppose the knowledge and behaviors are evident, and don't think it served as a major impetus" (opportunity question about behavioral selection), and "The result of analysis presented with graph and explained point by point. However, it seemed to be obvious, and the analysis did not affect me for the further learning" (opportunity question about graph reading).

From these descriptions, students with unfavorable opinions perceived the objective of this education program as a learning activity simply to acquire the knowledge and facts without self-reflection on the behavior.

5. Concluding Remarks

Based on the analysis of responses to the learning evaluation survey, it was observed that most students reviewed information ethics behavior as matters of their own concern, by having engaged in the selection task whereby selecting behavior they would take. As the result of receiving a debriefing on the task and reviewing the inconsistency graph, it was confirmed that students had interest in the inconsistency between knowledge and behaviors, becoming aware of inconsistent beliefs of others. Furthermore, it is expected the students attain the motivation to learn more about the solution and factors, considering the causes of inconsistency.

On the other hand, the current limitation of the proposed method comes from the fact that some students perceived an objective of this education program as simply acquiring the knowledge and well-known facts in information ethics. When experimental result is ensured with external validity, which means the result of the study can be generalized to other situations, implications of the result can be explained in general terms taking the dependence on individual situations into account. Therefore, to teach the significance of the experimental result as behavioral principles, learners have to understand the principles in relation to their own experiences, not merely in general terms. In this sense, it is important to note that this education program allowed students to be aware of the inconsistent beliefs of not only their own but also others. Such awareness is a key to further study of this learning support method, which is conducted in part as a cognitive psychological experiment and intends to facilitate understanding of mental process behind the ethical behaviors.

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